Railways in Australia
and
ARLHS BULLETIN
The Magazine about Australian Trains

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RAILWAYS IN AUSTRALIA —A MATTER OF ECONOMICS

It has been said that trade is the life-blood of a country; if this be so, then it is certainly true that railways are the arteries which carry it. Particularly is this true of Australia, where prodigious quantities of wheat, wool and livestock have to be carried over vast distances. Yet there are those in this country who are opposed to this, and who would sever the arteries.

Several years ago, a well-known savant who dabbles in journalism of the columnist type, refused to answer a question from one of his readers on railway matters, on the grounds that railways were already obsolete and, in twenty years, would be of negligible consequence.

Just what value may be placed on the professor's statements is hard to say—he is not in any way a railway expert—but his views are not shared by railroad companies in America. These concerns are spending astronomical sums on the expansion and modernisation of their systems—hardly symptomatic of impending decay. A similar position applies in other parts of the world, notably Russia, South Africa and South America.

The difficulties and drawbacks of Australian railways, which attract so much adverse comment are, in the main, due to the essentially developmental or strategic character of many of our lines—whole systems in the case of the Commonwealth Railways. But for these lines which, though millstones to the financial side of the undertakings, have been of inestimable value in the development of our country, most systems would show a reasonable profit.

Railways, generally speaking, are more efficient carriers over long distances than other forms of transport, and this applies particularly to the bulk commodities which loom so largely in our economy. This was borne out recently when, in an emergency, large quantities of

American power is a rare sight in Australia, but here is Commonwealth Railways' No. 79, class CA, a former New York, New Haven and Hartford R.R. ten-wheeler. She was heading a mixed train near Port Augusta, S.A., when Mal Park took this neat shot (14/8/46).

wheat were shipped to Newcastle by road. The freight charged was 2/7, as against 8d. by rail.

Specialised freights—those most easy to handle—are often cheaper by road, though it has often been the case that the demise of a railway branch has seen a speedy rise in road freight—and passenger—charges. In any case, it is scarcely a reasonable proposition to expect an undertaking to exist for the sole purpose of transporting unwanted goods at low rates. One thinks particularly of the huge movements of stock during the drought periods which devastate Australia from time to time; how these movements could be effected other than by rail, except at ruinous cost, is impossible to see.

(Next month we shall discuss the problems of passenger haulage on the railways of Australia.)

This month's cover shot (reprinted here for the benefit of the scrap-album fans) is of the Victorian Railways' streamlined, Pacific-type, express locomotive, S-class No. 302, "Sir Thomas Mitchell." Built in 1928-30 to haul the Sydney expresses between Melbourne and Albury, the four locomotives of this class were streamlined in 1937, with the introduction of the "Spirit of Progress" on this run. They are also to be seen on the Albury Express, a slower train on the same route. (From an official V.R. photo.)

FIRST IMPRESSIONS

First impressions count most, it is said, and, if such be the case, we shudder to think what must have been our readers' reactions to certain features of our first issue! The rail-fan population of Australia not being noted for its extent, it is not at present an economic proposition to run a magazine such as this on a full-time basis. Your editor, therefore, and the editor of the Bulletin, both carry out their duties in their rather scanty spare time. Unfortunately, the Editor's private affairs have developed along lines rather different to those anticipated (one or two railways in this country have had the same trouble!), and he has been unable to devote adequate time to this magazine. This situation is, fortunately, now easing. However, we had undertaken to produce "Railways in Australia" on a certain date, and determined to do so. This meant that last month's issue was prepared in haste and printed in even more haste—with results that were painfully obvious! We humbly beg your pardon and shall try not to do it again.

As regards the quality of paper used, present supply conditions make it difficult to obtain the type of paper we should like to use, but we have arranged that, whenever it is available, a better quality will be used. Arrangements are being made for a stiffer paper to be used for the cover in the near future.

WHAT DO YOU THINK?

In a very well-reasoned letter—too long to print in full—Mr. J. L. Buckland, of Albert Park, Victoria, suggests that news items should be concentrated in one section of the magazine, and not included in the Bulletin, which should be left clear for its original function of recording Australia's railway history.

For the benefit of new readers, the idea behind this magazine is that we print the Bulletin of the Australian Railway and Locomotive Historical Society and surround the cake, as it were, with an "icing" consisting of those features of a general rail-fan publication not already included in the Bulletin. The latter has been published for many years in a stencilled form, and its policy and content are well-established. News items are, however, a relatively new feature.

Any alteration to the Bulletin is, of course, a matter for the Bulletin Editor, and his views are being sought on this proposal.

Before anything is done, however, we should like to hear from our readers on the subject. Would you like a regular monthly page of news items, or would you prefer things as they are?

We have invited Mr. Buckland to become News Editor when and if the page becomes a feature of the magazine.

PHOTOS WANTED

We should be extremely grateful for any good railway photos suitable for reproduction on our covers. States other than New South Wales and Victoria are most desired. Half or full plate sizes are preferable, and the prints should be glossy. Action shots are best, of course, but any interesting aspect of railway operation would be suitable.

DEMAND EXCEEDS SUPPLY

If you were one of those who wrote in for copies of last month's "Railways in Australia" and did not receive one for some time, please accept our apologies. We simply ran out of copies, and had to send away for more. On present indications, there will not be sufficient to meet all requirements, so twice as many are being printed of this issue.

Thanks for your support—if it continues, we shall be able to provide a really good magazine.

OBITUARY

On 15th July last, New South Wales Railways lost one of their person of **Charles Lynn Little,** Coaching Rolling Stock Officer, who worked in the service for 51 years right up to his death at the age of 70 years and four months.

Mr. Little's tall, active, spare form was known to all railwaymen around Sydney Central Station, and all sections of the service were present at his funeral. Those present paid tribute to his outstanding energy right up to the end, also to his unfailing courtesy to those who had dealings with him, which never varied, whatever the rank of the person concerned.

Mr. Little was born in the Stationmaster's residence at Bowning in 1878, and first joined the railway service in November, 1896, as a Temporary Junior Porter, during the wool season, under his father, Stationmaster, Queanbeyan. He came to Sydney in 1897 as a permanent Junior Porter, and, in the following year, was attached to Inspector John Mars' Coaching Stock Office, where he remained till his demise. In 1912, he was appointed in charge as Coaching Inspector.

Only those intimately connected with the working of passenger trains during both war periods and their troublous after years, can have any idea of the tremendous organising work carried out by Mr. Little, who, somehow, always managed to find carriages for trains, in spite of the ever-present shortage of coaching stock.

STATE ELECTRICITY COMMISSION:

A repeat order has been placed with Thompsons Engineering Limited, Castlemaine, Vic., for additions to the fleet of standard 20-ton capacity gable-bottom bogie coal hopper cars to meet expanded coal production from the Commission's Yallourn Open Cut, which last year produced almost 7½ million tons of raw brown coal, the majority of which was used for electric power generation.

(J.L.B.)

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BRITISH RAILWAYS
Tentative Colour Schemes

Colours tentatively selected by the Railway Executive for British Railways, consequent upon the absorption of the several mainline systems and their subsidiaries, are as follows:

Largest express passenger locomotives —Blue with lining of red, cream and grey.

Other express passenger locomotives—Green with lining of red, cream and grey.

Mixed traffic locomotives—Black with lining of red, cream and grey.

Freight locomotives—Black.

Mainline corridor trains—(a) Plum and spilt-milk lined with bands of yellow-maroon-yellow separated by lines of spilt-milk; (b) Chocolate and cream lined with black and golden yellow.

Local suburban steam trains—Maroon lined with golden yellow - black - golden yellow.

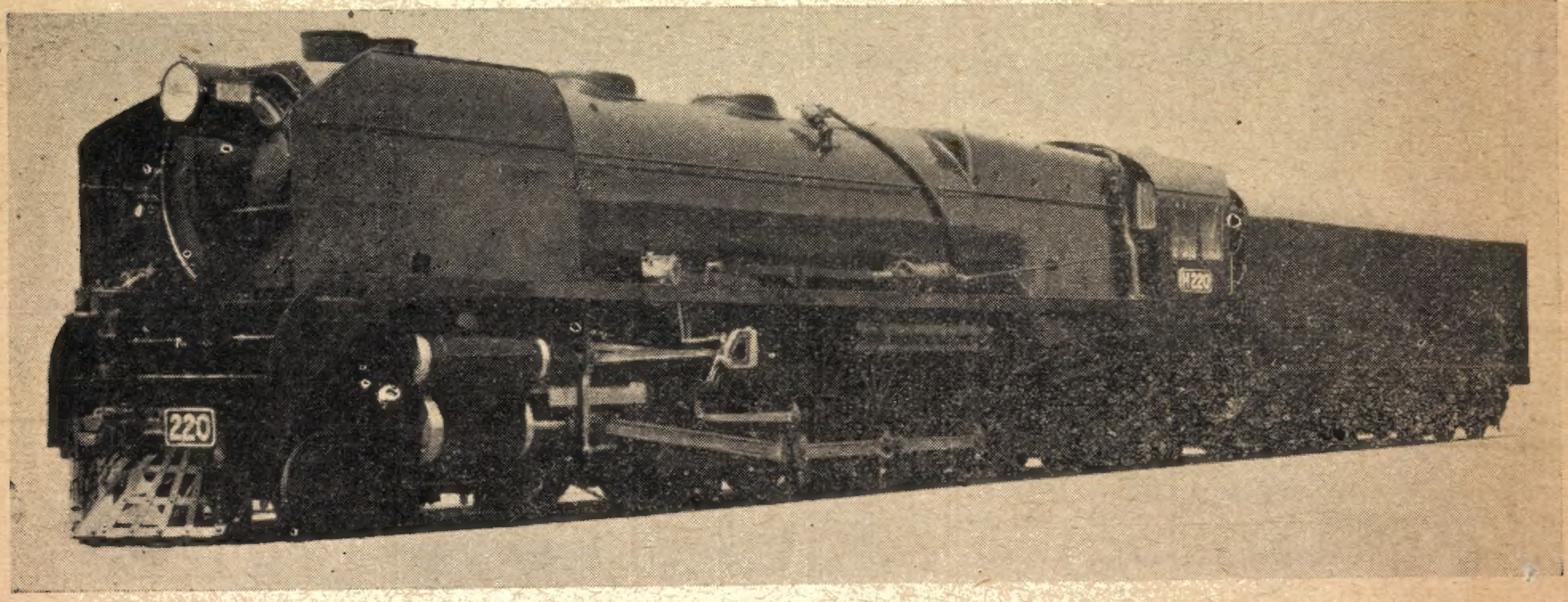
Multiple-unit electric sets—Green.

(We cannot wait to discover what "spilt-milk" may be!—Ed.)

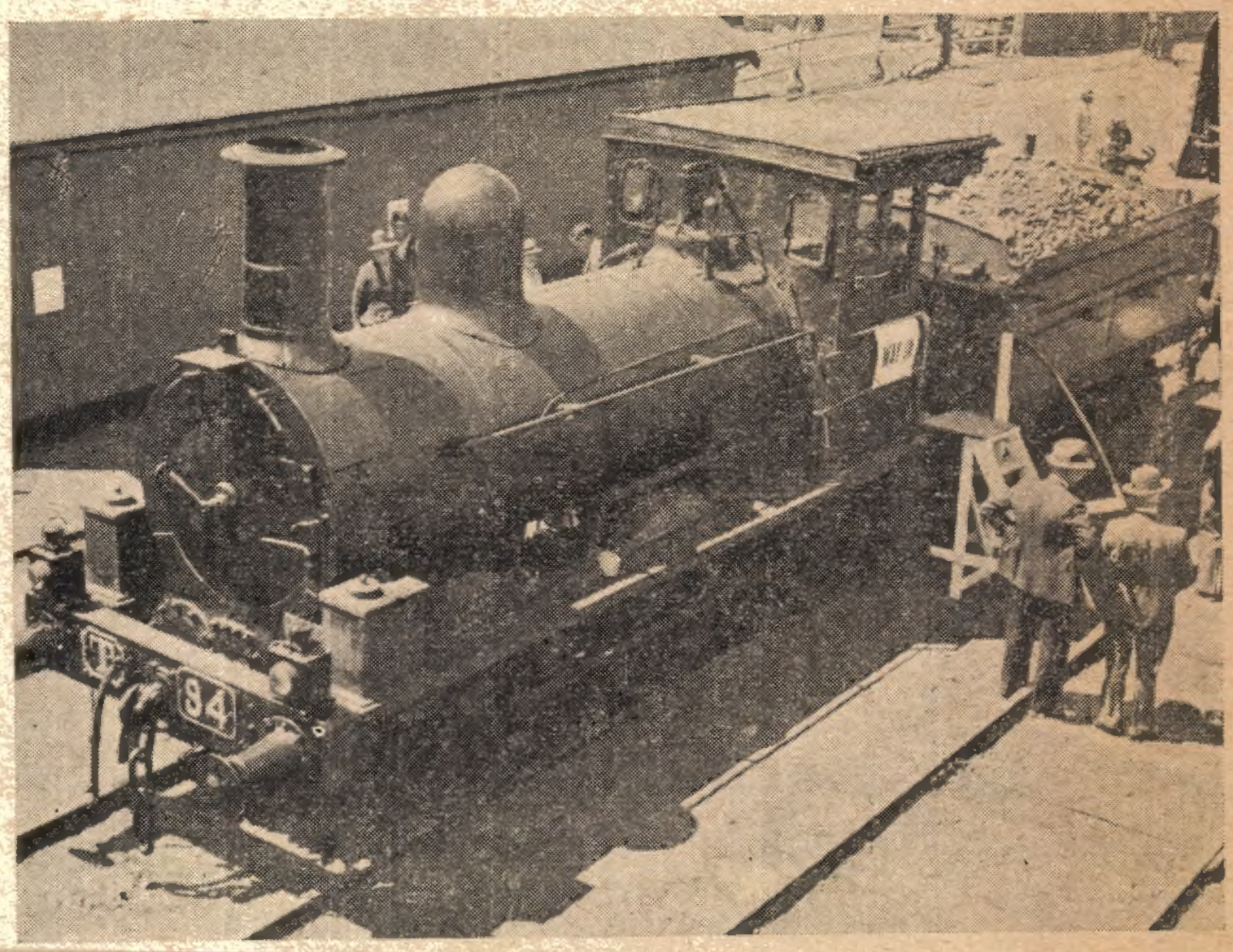
A number of trains painted in these colours are being operated over a wide area during the summer months so as to enable the people to view them. The public are invited to write to the Executive, setting out their views on the new colours.

In selecting colours for British Railways, the Executive faced no mean task, for, in addition to the question of durability and appearance, very strong attachments to the colour schemes of the former companies exist. Similar feelings were encountered after the 1923 groupings and persisted almost to the present day.

Criticism has already been voiced of the new colours on the ground that the locomotive colour schemes do not blend well with those of the rolling stock.



Designed originally for hauling the "Overland" express over the heavy grades of the Melbourne-Adelaide route, Victorian Railways "H" class 4-8-4 loco, No. 220, has not yet operated on that route, owing to the light rails which prevail. Introduction of powerful diesel-electric locomotives on the Overland route will probably result in the permanent relegation of "Heavy Harry" to fast freight duties on the North-Eastern line which has been the lot of this powerful machine. One trial return trip was made on the "Spirit of Progress." Newport Workshops turned out No. 220 in 1941, and, for a short time, the loco was on view at Spencer Street station. By way of contrast, No. 94, a venerable "T" class 0-6-0, was brought from retirement, refurbished, and placed on display on the same track. The picture of No. 220 is from an official V.R. photo; that of No. 94 from a shot by John L. Buckland.



THE WAITING ROOM—

Letters to the Editor

The Editor will be glad to receive for publication letters from readers on any aspect of Australian railways—past or present. Contentious matters likely to cause ill-feeling should, of course, be avoided, as also should attacks on railway administrations—these are best made in the press.

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post in due course; please enclose a stamped, addressed envelope.

J. L. HOGG, Ashfield, N.S.W. Thanks for your comments. Using your contribution this issue—we can take as much as you can dish out!

JOHN L. BUCKLAND, Albert Park, Vic. Your letter much appreciated; suggestion re news items being put to the vote. Will use the photos you sent as opportunity serves.

Tails of the Rails

Contributions under this heading are invited from our readers. Tales may be humorous or otherwise, and should describe some incident or incidents on an Australian railway. Events overseas, however interesting, are not desired at present. Write clearly, of course, and on one side of the paper.

This month's tale is from the pen of reader J. L. Hogg, Ashfield, N.S.W.

In the war years, when Nos. 1 and 3 Melbourne Expresses were heavily loaded up to twelve and more cars, and hauled by the then new C38-class locos from Sydney to Goulburn, they made a stop at Picton to attach a "32" (first built 1891) for assistance to Moss Vale.

One night, No. 3 Melbourne Limited was five minutes late from Picton, and the C38 driver really opened her out, and the hills around the old town reverberated with the sound of the massive "38" and her small pilot engine.

(Continued on Page 20)

Question Box

Questions on any aspect of railway operations, past or present, in Australia, may be sent to this journal. Mark the envelope distinctly "Question Box". If we don't know the answer, we'll endeavour to find out, and, if all else fails, we'll print your question and leave it to our readers. (It is regretted that direct answers cannot be posted to correspondents.)

Reader Eric Wild, of Rhodes, N.S.W., asks:

"What is the function of the third rail used on some sections of the Sydney suburban electric railways?"

ANSWER: To act as a negative return. Where manganese steel rails are used, the normal return through the running rails is not sufficiently effective, and old rails of better conductivity are laid to improve this. They are cheaper than the copper cable which would otherwise be necessary. These rails are bonded to the running rails at frequent intervals.

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

This month's "Favourite Photo" is the work of reader Ken Winney, of Chatswood, N.S.W., and shows No. 18 (Up Brisbane Express via Wallangarra) near Berowra on the New South Wales Railways; No. 3805 is doing the heavy work. The upper quadrant automatic semaphore signal is typical of N.S.W.R. practice on double-track country lines. Modestly turning his back to the camera is A.R.L.H.S. Joint Secretary Gordon Taylor. The date—March, 1948.

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Automatic Train Control Systems in Use

(The following is an extract from "The Times Review of Industry" for September, 1947. References are, of course, to the British Railways of that time.)

With the exception of Australia, where the London Transport type of train-stop is in use on certain railroads, to the writer's knowledge India is the only other country in the British Commonwealth of Nations at present experimenting with automatic train control.

Generally speaking, automatic train control is a system of appliances operated in conjunction with fixed signals located alongside the railway line so that in the event of a driver failing to observe a danger signal a warning is given in the engine cabin and the brakes are applied. The science of railway signalling has now advanced to such a stage that the possibility of a false "clear" indication or a signal giving an imperfect indication has been reduced to the minimum. Nevertheless, many serious accidents have occurred through drivers missing danger signals because of distraction, fog, snow, or some other cause. The boiler contributes towards the driver's difficulties, particularly in modern steam engines, by reason of its large size, which narrows his view of the line ahead. With an electric train or locomotive there is no such drawback, a perfect view of the track being afforded in most instances.

It has been suggested that if a faultless system of automatic train control could be devised, fixed signals could be dispensed with. There are several objections, however, to such a proposal. For example, it is essential that drivers should always be on the alert, and if signals were scrapped their vigilance would tend to a great extent to diminish. Again, some indication is necessary to mark entrances to block sections while signals are also required for shunt movements, and to provide the necessary interlocking for points and crossovers. The ideal system combines fixed signals with a warning on the engine, and perhaps an automatic brake application.

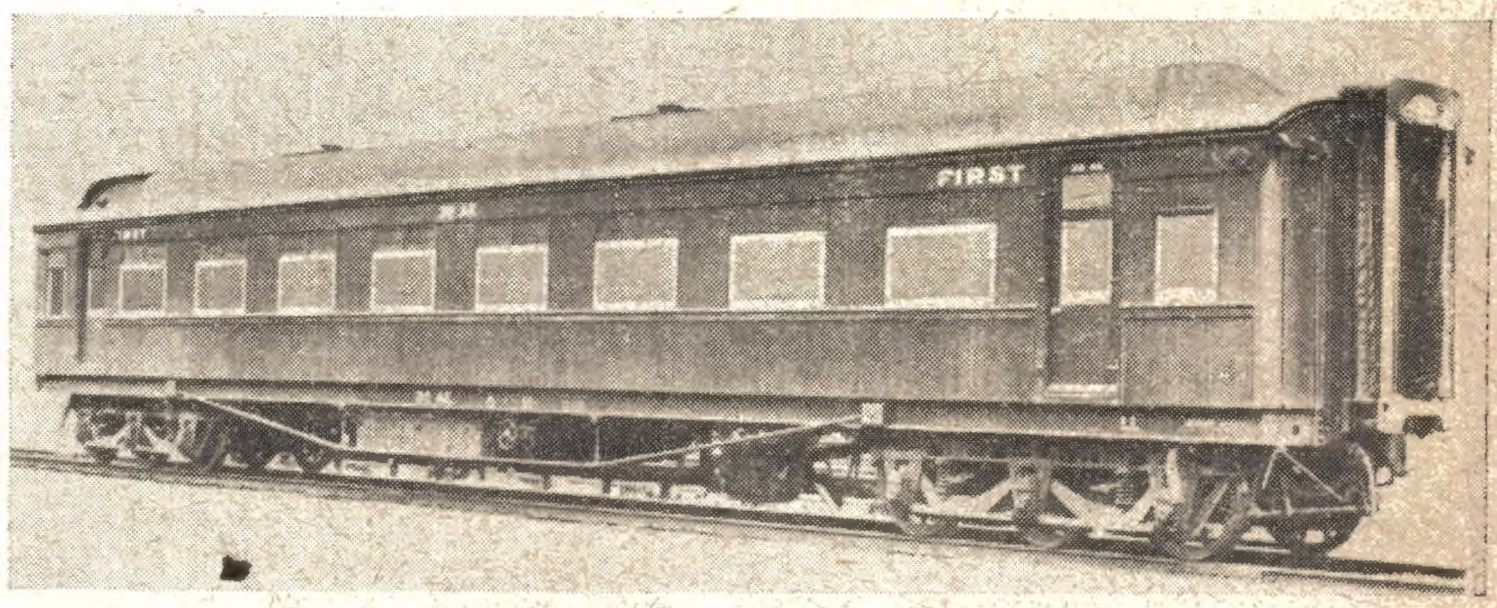
Many serious accidents have led reporting officers to recommend the use of automatic train control. A typical train disaster involving loss of lives occurred in England on March 22, 1931, and in this instance the distant signal was missed, although the weather was clear. The speed of the train, however, was far in excess of that permissible for the low-speed route which had been set. The engine was derailed and the train wrecked. In his report, the Ministry of Transport's officer said: "It is difficult to imagine a better illustration in support of the conclusion of the recent committee upon automatic train control. Had equipment of this kind existed, operating in conjunction with the distant signal, I think that this accident would have been prevented."

EARLY PATENTS

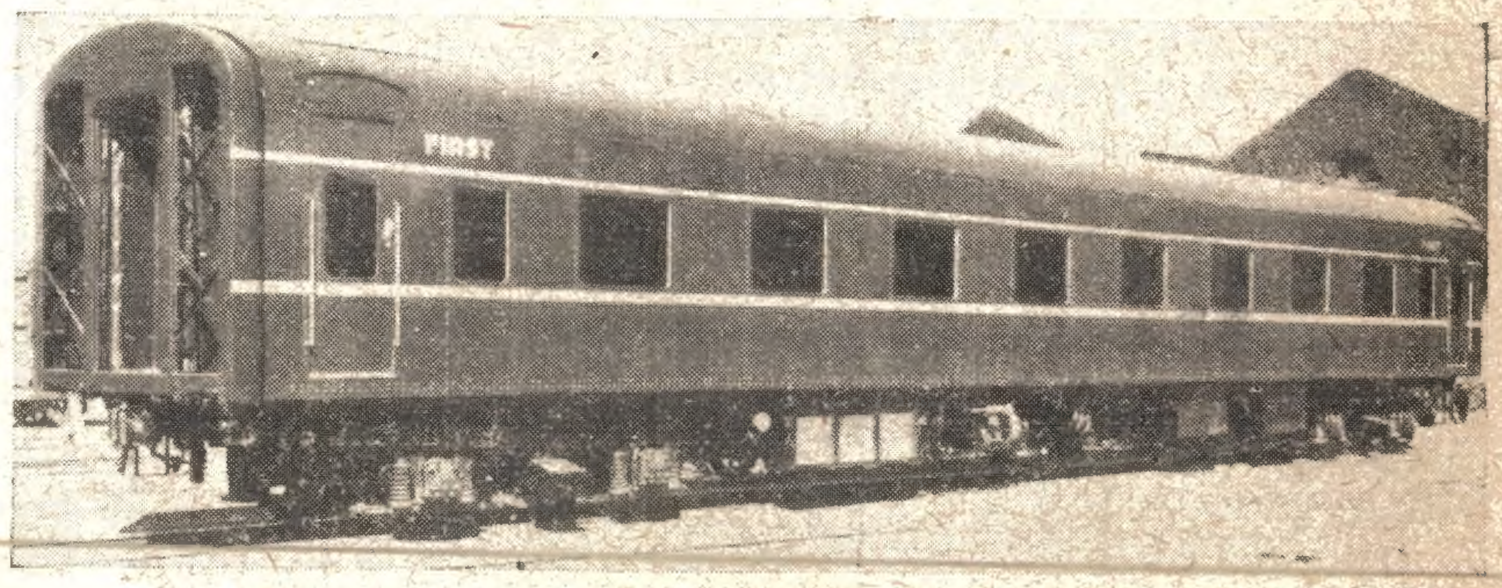
The idea of giving a warning to drivers on passing adverse signals

ROLLING STOCK PARADE

"Rolling Stock Parade" this month features four interesting passenger cars of the Victorian Railways.



Of particular interest is No. 36, class AE, the first air-conditioned car on the system. Obvious differences from the standard AE design (from which No. 36 was converted) include the sealed windows and clerestory lights, as well as the casing for the air-conditioning apparatus. No. 36 is usually to be found on the Mildura Express.



Part of the regular make-up of the "Spirit of Progress" (Melbourne-Albury) are five AS-type 1st-class passenger cars, the first of which to be built is shown here. Identical cars are attached to the Albury Express, and a similar but more modern version is in production at Newport Workshops.

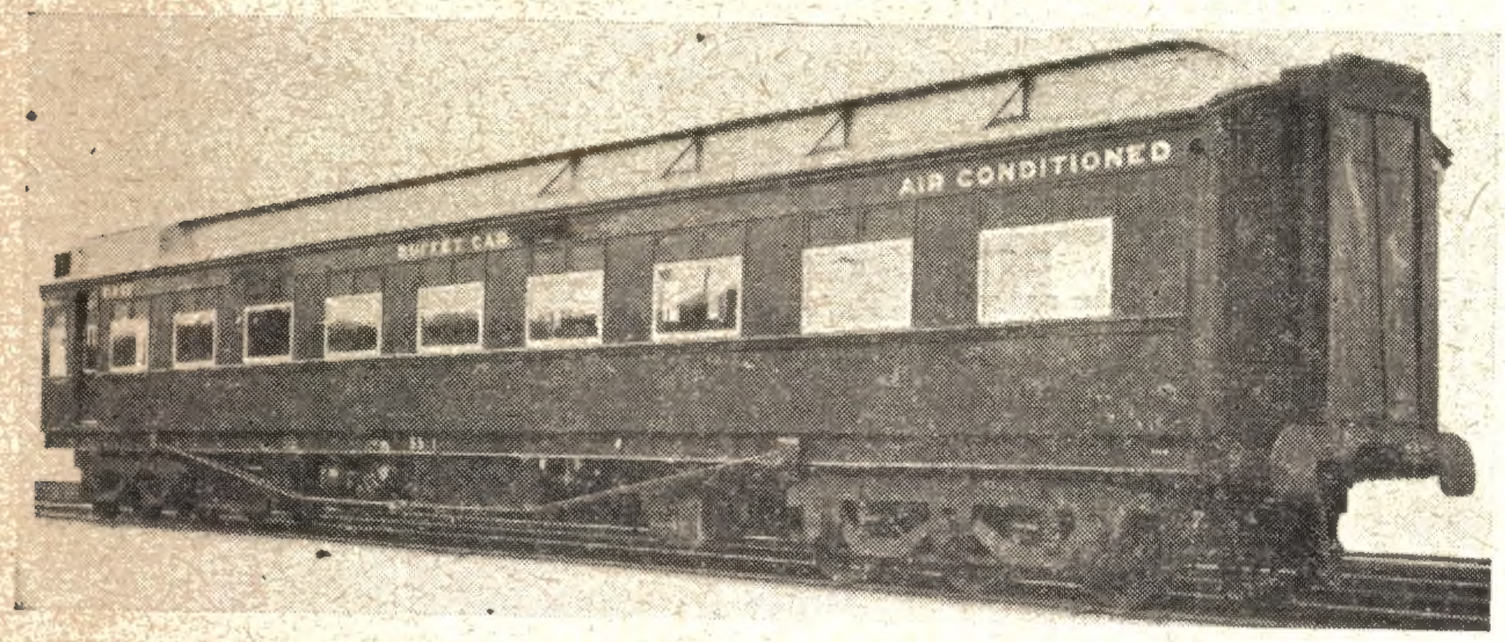
is by no means new. As long ago as 1840 there were patents for apparatus claimed to be able to stop trains if they passed signals. One of that year by Pettit Robert provided an arrangement whereby a pointsman by working a lever caused an arm to strike a moving member on the engine which operated both steam regulator and whistle.

A patent by Gooch suggested what was virtually a three-aspect signalling system in the engine cab. A ramp was placed alongside the track which was worked by a signal wire in conjunction with the signal, and a vertical rod was attached to the tender axle box which had a roller at the bottom end to minimize friction when engaging with the ramp, while the rod was connected to a ramp to operate red, white, and green glasses. In an invention by Digney a steam whistle was controlled by an electro-magnet energized from a brush on the engine. In the event of the engine passing a danger signal the brush collected current and operated the electro-magnet. This system was introduced on the French Nord in 1872.

The chief disadvantage of all these systems, even up to the present time, is the number of moving parts involved. Delicate apparatus has also often been suggested, which would be unsuitable for use under the strenuous conditions of the footplate. For this reason, automatic train control is not used to any great extent, but there is a noteworthy installation on the Great Western Railway. This system, devised by Jacobs, Insell, and Bowden, all officials of the G.W.R., has been in use since 1906. To understand it some reference must first be made to the function of the distant signal. This signal is the first encountered when approaching a station. It has a fish-tailed arm and when at "caution" tells the driver that the next stop signal ahead, or perhaps the one after it, is at danger and that he must reduce speed and be prepared to stop. The usual distance between a distant signal and the first stop signal is about 880 yards, though in these days of high-speed running in many instances the interval has been increased to 1000 yards.

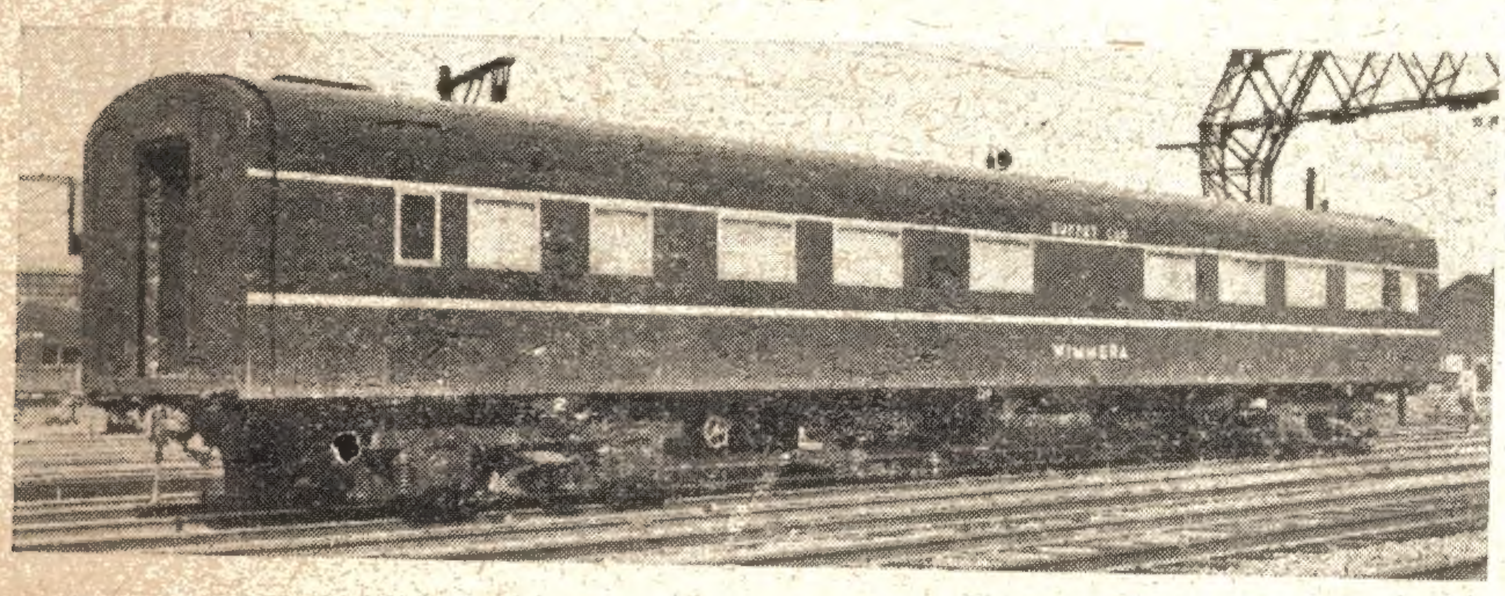
EQUIPMENT ON G.W.R.

Under the G.W.R. system a metal ramp of from 40 ft. to 60 ft. in length is fixed in the middle of the track. This ramp is electrically connected to the distant signal lever in the signal cabin and is energised when the signal is "off." On the engine is a contact shoe which controls normally made contacts, while a local circuit controls a relay governing the steam whistle and vacuum brake. If the engine passes over a ramp which is not energised (distant signal at "caution") the contact shoe, through coming in contact with the ramp, is raised, thereby breaking its contacts and dropping the controlling relay. The whistle is sounded and brakes applied. If, however, the ramp is energised, on the shoe making contact the circuit goes through a polarized relay, which rings an electric bell on the engine and also prevents the controlling relay from dropping, though the contact shoe has been raised. Many thou-



A popular feature of the Mildura Express has been the air-conditioned Buffet Car, No. 55, shown here.

All-steel Buffet Car "Wimmera" is an attractive feature of the standard Albury Express make-up. Service personnel on leave during the recent war will remember the cheerful bustle of this car and the appetising snacks to be had on board the "country cousin" of the "Spirit of Progress."



"Spirit of Progress" cars are painted attractively in royal blue with gold bands above and below the windows. Victorian Railways country passenger stock generally is painted dark red with light grey linings.

(Official V.R. photos.)

sands of miles of G.W.R. main line track are equipped with this apparatus, and under strenuous operating conditions it works well.

The Hudd system now installed on sections of the London, Midland and Scottish Railway (principally on the London-Southend section) does not use any moving apparatus on the locomotive, but operates on the inductive principle. Two inductors are placed between the running rails, about 20 yards apart and about 200 yards outside the distant signal. The first inductor is a permanent magnet with the south pole directed towards oncoming traffic. The other inductor is an electric magnet which, when energised at 12 volts, produces a powerful magnetic field. In this case the north pole is directed towards oncoming traffic, the reverse of that presented by the permanent magnet. This inductor is energised through a local circuit controlled by a line relay operated from the signal cabin. When the distant signal is "off," the inductor is energised.

L.M.S. INSTALLATION

The engine equipment consists of a receiving unit formed of an iron collecting plate with pole pieces, the plate passing over the inductors with a clearance of about 4 inches. Between the pole pieces a special permanent magnet armature is fixed, mounted on ball bearings. The armature is connected to the vacuum apparatus on the locomotive and on passing over the permanent magnet inductor is partially rotated and the vacuum horn on the engine thereby sounded. If the second inductor is energised, through the distant signal being at "clear," the armature is restored to its original position and the horn closed. But if the second inductor is de-energised, the horn will continue to sound, the brakes will be applied. This system has been carefully tested by the L.M.S.R. over a number of years and installed at a number of signal locations on the Southend line.

In 1946 an automatic train control committee for all India was set up in Bombay composed of the general manager of the Bombay, Baroda and Central India Railway as chairman and the chief signal engineers of that railway and the Great Indian Peninsular Railway, with the chief transportation officer as members.

This committee decided to conduct experiments with the Hudd inductive apparatus at 10 stations on the B.B. & C.I.R. and with the American type (General Railway Signal Company) inductive system on the G.I.P.R. The B.B. & C.I.R. is also experimenting with an adaption of the Great Western system. Because of clearance difficulties the ramp is mounted outside the rails and the collecting shoe is attached to the non-spring borne portion of the tender. The ramp receives positive, negative or is not energised according to signal aspects. These conditions operate circuits on the locomotive which sound an electric bell and illuminate red, yellow, or green visuals in the cab in front of the driver's station. The apparatus is in the experimental stage and a decision on its final form has not yet been reached. The inductive apparatus is on order from the United Kingdom.

DIESEL DOINGS

Biggest news on the Diesel Electric front this month is the agreement reached by the Clyde Engineering Company of Clyde, New South Wales, for the construction under licence of General Motors Diesel Electric locomotives. Certain matters connected with the dollar situation remain to be settled, it is understood.

Clyde is to build the big mainline diesels for the Victorian Railways—the contract is for eighteen, not twelve as previously reported. The shunting locomotives also on order are to come from English Electric, it is believed.

Only two diesel electric shunters now remain at Sydney, N.S.W. Nos. 7921 and 7922 have been transferred to the Commonwealth Government. Mr. J. L. Buckland, of Melbourne, reports having seen these engines pass through that city on April 28 last

Continued from Page 17

On arrival at Moss Vale, exactly two minutes ahead of schedule, the lanky, red-headed fireman from Picton commenced to uncouple the "32". Meanwhile, the 1st-class Salaried Driver off the Limited's engine hurriedly came down to where "Bluey" was uncoupling. "Gee! I was moving up that hill, sonny," the excited driver said. "You might have been," drawled "Bluey," "but we were going faster—we were ahead of you all the way."

VICTORIAN RAILWAYS: In order to cope more expeditiously with the increased output of raw brown coal and briquettes from the Yallourn area, Herne's Oak (the junction point on the Gippsland main line for the branch to Yallourn), at present a non-crossing Intermediate Electric Staff post in the through section Moe-Morwell, is to be made into a fully interlocked crossing loop and switch-out Staff station. Under the South Morwell scheme for opening a new open cut mine, and in connection with the diversion of the present main line via Yallourn, a temporary triangle connection at Herne's Oak towards Morwell will be provided, pending complete abandonment of the present route and the interim route via Yallourn by a new permanent line north of the Latrobe River, via Maryvale to Traralgon. The existing and future town of Morwell-Maryvale will be on a spur line, using part of the existing private line of the Australian Paper Manufacturers between their pulp mill at Maryvale and Maryvale siding. New passenger stations will eventually be provided at Yallourn and Maryvale.

—(I.L.B.)

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Vol. 1, No. 3 — September, 1948

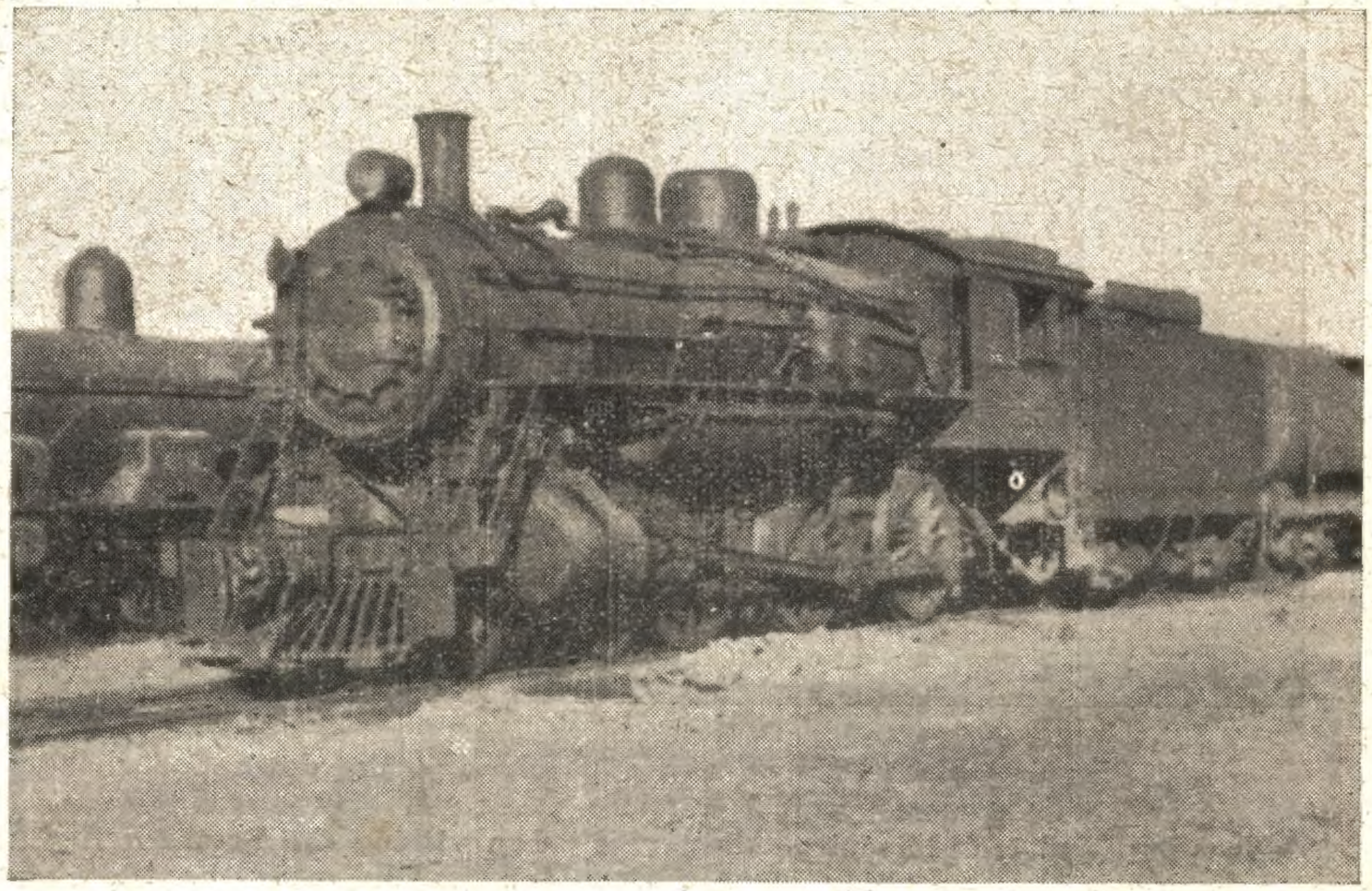
RAILWAYS IN AUSTRALIA —HAVE THEY A FUTURE?

It has become fashionable in some quarters to refer to railways as obsolete or, at best, obsolescent. Where this talk emanates from motor or airline interests it may be excused as enthusiastic, if inaccurate, propaganda. In point of fact, however, the motor industry generally is alive to the value of railways—it is the ill-informed man-in-the-street or the story-seeking pressman who takes this unfortunate view.

All Australian railway systems are in some degree antiquated in method, outlook or equipment and some, perhaps, completely so. This does not mean, however, that railways are in themselves obsolete as a means of transport either of passengers or of freight. When your motor car is worn out, you buy, not an aeroplane, but a new car. So with railways; the remedy for obsolescence is not abandonment in favour of road transport and airways, but the provision of new and better equipment and methods.

Nowhere is this better realised than in the United States where, despite the amazing development of air and road transport, the railway companies are spending billions of dollars on the improvement of equipment and facilities already superior to those found elsewhere.

No one would be so foolish as to claim that railways can do everything and, particularly in the passenger transport field, there is considerable scope for alternative means of transport. No train can compete with a plane for speed over long distances (though there are catches in this—of which more anon). Similarly, in areas remote from the beaten track where rail traffic justifies only one or two trains per week, the bus is obviously the only solution to day-to-day



Canadian readers will be interested in this shot of a former Canadian National ten-wheeler which migrated to Australia during World War II. Used on the East-West Transcontinental service of the Commonwealth Railways, she is classed CN and numbered 76. When Mal Park snapped her at Cook (18/7/46), No. 76 was not in steam.

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transport problems.

The principal difficulties in Australia are the lack of modern rolling stock and the vexatious breaks of gauge. This is particularly so in the case of the Sydney-Melbourne run of which we shall be writing in the near future. Several systems are making strenuous efforts to provide modern and attractive rolling stock and the gauge-unification scheme has been approved fairly widely. (It is particularly distressing to hear that New South Wales is reluctant to assume her share of this important task).

Providing that these matters are taken to their logical conclusion and the modernisation programme is regarded as normal and continuous, there is no reason why railways in Australia should not provide our main means of travel for the forseeable future.

Leaving Moss Vale on a wintry July day, the down Cootamundra passenger train provides an attractive study for this month's cover. No. 3640 was doing the heavy work when John Buckland took this picture last year when visiting the Southern Highlands of New South Wales. Notice the interesting junction signal on the Up road; the Main arm is upper quadrant auto, the Branch being lower quadrant mechanical semaphore.

WHAT THE RAILWAYS ARE DOING

Edited by John L. Buckland

£4 Million Tasmanian Railway Rehabilitation Recommended by Royal Commission

Expenditure of approximately £4 million of new capital on modernisation and rehabilitation of the Tasmanian Government Railways between 1948 and 1963 has been strongly recommended by Mr. W. D. Chapman, of the Commonwealth Rail Standardisation Division, who has concluded an enquiry into the management, administration and operation of the system extending over several months.

In his report to the Tasmanian Government, recently published, he recommends that for the rehabilitation period (1950-54) in addition to the ten 600 b.h.p. diesel-electric locomotives already on order from English Electric Co., orders should be placed for the following motive power for progressive replacement of existing over-age units up to 1963:—

Ten 600 b.h.p. diesel-electric locomotives to cost	£420,000
Fifteen 4-8-4 dual-service steam locomotives to cost ..	420,000
Ten 1000-1500 b.h.p. diesel-electric locomotives to cost	600,000
Total	£1,440,000

In addition to freight cars already on order (and in course of delivery), totalling some 200 units, the acquisition of 20 standard steel passenger cars, costing £240,000; two modern steel buffet cars, costing £24,000; five steel baggage cars, costing £30,000 and additional freight cars, costing £200,000, is recommended. Concurrently, reorganisation, re-equipment and extension of the Launceston workshops to cost £56,750 are to be undertaken, together with provision of modern locomotive terminal facilities at Hobart and Devonport, regrading and relocation of sections of the main line and reorganisation of the Stores section.

The report recommends that all existing branch lines should continue to be operated pending further investigation, at least until the necessity of major replacement of bridges and other structures, involving capital expenditure, should arise. However, hte closure of the short line from Parattah Junction to Oatlands and the Apsley branch is recommended. (The Apsley branch was closed in 1947 and dismantled before the end of June, 1948).

Itemised expenditure planned for the five developmental periods is set out as under:—

1. EMERGENCY PERIOD (1948-50). Track strengthening and relaying, £80,000; sidings and additional crossing loops, £10,500; Hobart station, £10,000; signals and interlocking, £36,000; locomotives and rolling stock (secondhand), £100,000; workshop equipment and extension, £120,500; total, £357,000, at an average annual outlay of £178,000.
2. REHABILITATION PERIOD (1950-54). Track regrading, £250,000; Hobart station, £60,000; signals and interlocking, £40,000; locomotives (new), £1,440,000; rolling stock, £494,000; stores facilities, £35,400; workshop equipment and extensions, £184,250; total, £2,503,650, or an average of £625,915 per annum.
3. DEVELOPMENTAL PERIOD (1954-60). Signals and interlocking, £50,000; workshop equipment, £6,000; average annual outlay of £9,333.
4. POST DEVELOPMENTAL PERIOD (1958-63). Locomotives, £1,000,000.

The recommended total capital expenditure under all headings to 1963 is therefore £3,916,650, additional to normal working expenditure and provision for interest on capital indebtedness.

The report is a comprehensive document, covering many other aspects of the administration and operation of the system, which is now a branch of the Tasmanian Transport Commission, particularly with regard to rating revision, passenger fares and passenger transport co-ordination.

The rolling stock, locomotive and mechanical engineering sections have been competently reported upon by Mr. O. G. Meyer, Acting Chief Mechanical Engineer, Division of Rail Standardisation, assisting the Royal Commission. Mr. Meyer recommends the immediate replacement of the vast majority of the over-age locomotives and rolling stock now only retained in service at increasing cost and ever-rising casualty rate, even before the new equipment on order or recommended can be obtained.

In the emergency period (1948-50), therefore, the purchase of additional Australian Standard Garratt locomotives from surplus stocks and some former South Australian Railways Yx-class locomotives which are available in the Commonwealth, is recommended in view of the impracticability of procuring new equipment from any source immediately. The Tasmanian Government has already implemented this recommendation by purchasing eight A.S.G. locomotives in Queensland and seven ex-S.A.R.Yx. (Commonwealth Railways NFB) locomotives ex the North Australian pool at Katherine, N.T. The A.S.G. locomotives will be modified to Tasmanian requirements, and overhauled by Evans Deakin & Co., Rocklea, Q., before delivery in running order.

Another stop-gap measure is the negotiation for the purchase by the Tasmanian Government of the remaining surplus freight rolling stock on the North Australian Railway, which includes brake vans, flat and tank cars, all equipped with the vacuum brake, and some in almost new condition.

VICTORIAN RAILWAYS PLAN NEW CONSTRUCTION

Approval has been given by the Parliamentary Standing Committee on Public Works to the proposal to construct approximately four miles of new single track electric railway from Alphington on the Heidelberg line, to the vicinity of Broadway, East Preston, to serve the new Housing Commission estates now being developed. Estimated

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cost is £240,000, but construction is unlikely to be undertaken at present.

The committee has also approved of the deviation from Moe through Yallourn of the Eastern Gippsland main line, and construction of new marshalling yards at Yallourn, as well as locomotive terminal facilities there.

A modern single-span steel bridge will be constructed to replace the present wooden pile overbridge carrying the roadway over the railway at Madden Avenue, Mildura.

Sale Town Council is asking for tenders for the bituminous sealing of the roadways at the Sale railway yard.

NEW SLEEPERS ON "WESTLAND", W.A.G.R.

Three modern all-steel first-class sleeping cars, each containing eight twin-berth compartments have been constructed by the W.A.G.R. Midland Junction shops, and are running on the "Westland" expresses operating between Perth and Kalgoorlie, 375 miles. These cars are a considerable advance over any previously operating over the 3ft. 6in. gauge in this country. Fluorescent lighting, iced drinking water and hot and cold water supply in toilets and compartments are provided. A staggered corridor, similar to N.S.W.R. practice is retained, and there is a shower compartment and conductor's compartment. Each cabin has an electric fan, and there are extractor fans in the roof. The windows are of large area and spring-balanced. Exterior colour scheme is in green and cream, with pastel tones for interior decoration. Carried on roller-bearing four-wheel trucks, the cars have "tight-lock" centre buffer-couplers wtih friction draft-gear. An innovation is the provision of a bottle-opener and a stainless steel waste receptacle in each compartment.

(V.R. Newsletter)

NEW SOUTH WALES RAILWAYS

Because of the critical shortage of freight rolling stock and the inability of local manufacturers to deliver more than a fraction of the units on order, the New South Wales Government plans to order MRC-type bogie refrigerator cars, MLV bogie louvre cars and U-type four-wheel utility gondola cars at a cost of £5 million from British manufacturers. This will be the first occasion for almost fifty years that rolling stock units (other than locomotives) have been bought overseas for the New South Wales Railways.

With orders already placed with Australian car builders, the Department will have 3,350 freight cars on order, comprising 150 refrigerator cars, 300 louvre cars and 2,900 gondolas.

SOUTH AUSTRALIAN RAILWAYS

Because of repeated hold-ups of motor car bodies caused by lack of shipping and high cost of overland road transport to eastern States assembly points, the South Australian Railways have signed a contract with Adelaide body-building plants to haul motor bodies in specially adapted railway freight cars, pending production of an automobile-type box car specially designed for the purpose. At present a number of O-class 40-ton bogie gondola cars have been fitted with attachments permitting loading of from six to eight bodies in two tiers covered with tarpaulins. These cars are reclassified as OM, and are distinguished by being painted red-brown with a broad yellow band on the sides and ends. Since the first shipment was experimentally made in January, 1948, about a dozen cars have been altered and repainted. They are used principally in interstate service between Adelaide and Melbourne.

VICTORIAN RAILWAYS

The sole H-class 4-8-4 locomotive, No. 220, is to be experimentally equipped with German equipment to burn raw brown coal of high moisture content. The alterations will involve fitting a Waugh type grate, a cyclone front end and an enlargement of the bunker capacity (at present nine tons).

Two A2-class locomotives (Nos. 954 and 971) are running with tenders originally belonging to other engines; the cast iron number plates of which have been turned back to front. The new number is painted on the reversed plates, creating somewhat of a precedent, reports Mr. W. Jack, of Ballarat.

Some progress has been made at Newport shops with the assembly of materials for erection of the first of the new R-class 4-6-4 locomotives. The boiler is partially completed and the bar frames and cast steel cylinders have been received from Bradford Kendall Ltd., Sydney and machined. New-type cast steel wheel centres having a U-shaped spoke section for greater strength without increased weight, and a new-type pilot of sheet steel with vertical slots are to be used. The block of numbers 500-589 (at present allotted to D1-class) have been provisionally allotted to the new class. Motion details already manufactured have been stamped "500", reports Mr. W. Jack, who sends this interesting information.

A third A2-class locomotive (No. 986), was equipped with a set of Boxpok driving wheels during July, 1948. During the same month, A1-class, No. 811, was rebuilt with a superheater boiler and renumbered as A2, No. 820.

On the night of July 23-24, a special train hauled an out-of-gauge load consisting of an alternator stator weighing 66 tons, loaded on the special 16-wheeled alternator stator transport car, and an alternator rotor, weight approximately 25 tons, loaded on a standard Q-type flat car, from Williamstown Pier to Newport Power Station. Special traffic arrangements were made including some wrong line working to get the over-width stator past North Williamstown station.

During July, 1948, the Up and Down Distant signals at Everton were removed and replaced by "Location Boards," the first such use of same at a junction station in Victoria.

On July 28 the first 153 b.h.p. Walker-Gardner diesel rail motor train entered service between Melbourne and Heathcote. This is a larger and more powerful version of the 102 b.h.p. single car units now in course of delivery, and is designed to haul one trailer car. The second 153 b.h.p. car is expected to operate between Ouyen and Pinnaroo. Twelve single unit cars, six 153 b.h.p. cars with trailers and 12 twin-car double-ender units having an articulated 240 b.h.p. power unit are on order. Body work is by Martin and King, motor body builders, Malvern, and lightweight underframes and trailing bogies are being constructed by Thompsons Engineering Co., Castlemaine. The cars are being assembled and fitted out at Newport shops.

Construction of the new Cairn Curran reservoir on the Loddon River, near Newstead, by the State Rivers and Water Supply Commission will necessitate a deviation of the main line from Castlemaine to Maryborough in the vicinity of Joyce's Creek at a cost of approximately £80,000. Surveys are at present being made.

The order for eighteen 1500 b.h.p. diesel-electric dual-purpose road locomotives which has been placed with the Clyde Engineering Co. Granville, N.S.W., is dependent upon permission being obtained from the Commonwealth Government for expenditure of about 40 per cent. of the contract price (£1¼ million) in the United States of America for the supply of engines, generators and control gear and possibly traction motors by Electro-Motive Corporation, of La Grange, Ill. Under the recently announced agreement, Clyde will assemble Electro-motive diesels in Australia for local and far eastern markets when the dollar position can be satisfactorily resolved.

The six 350 b.h.p. diesel-electric switching locomotives which have been ordered by the Victorian Railways from "a British Manufacturer" are believed to have been ordered from English Electric Co.

EMU BAY RAILWAY CO. (Tasmania)

This company is constructing a number of bogie flat cars in its Burnie shops to the order of the Associated Pulp and Paper Co., at Burnie, for wood haulage to their mill over both Tasmanian Government and Emu Bay lines. The cars are privately-owned by the A.P.P.M. and they are distinguished by these initials over the date 1947 on the axle box covers, writes Mr. G. Sweetapple of Burnie.

Continued on Page 20

THE WAITING ROOM—

LET'S GET THIS STRAIGHT!

A reader has commented on the fact that this magazine has only 20 pages, whereas advance publicity promised 24. The explanation is that it was originally planned to have pages of the size of those in "Tram Tracks" (8 in. x 5 in.); when it proved feasible to use the larger size, the number was reduced correspondingly. The amount of material is actually greater, so nobody is being swindled! As soon as sales justify such a move—and they are beginning to show promise —we shall increase the number of pages to 24 and even more.

POSTING OF MAGAZINES

Enquiries have been received regarding the despatch of this magazine by post to A.R.L.H.S. members. It is pointed out that this is the responsibility of the Sydney and Melbourne branches of the Society, to whom we supply copies in bulk. Members are asked to write direct to the appropriate secretary regarding change of address, non-receipt of copies, etc. Other subscribers should, of course, continue to write direct to us.

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park. Addresses will be found on page one.

Corrections to recent issues are given hereunder:—

JULY ISSUE

TAM sleeping cars (page 18) accommodate 20 passengers in ten cabins, not twelve as shown.

The description of KAM cars was rather vague. These cars have a lounge at either end, in which seating accommodation is provided, in comfortable, individual armchairs, for use during the day and while berths are being made up. Both these cars and the MAM type, with which they are run in conjunction, have fixed berths. In earlier cars, the berths are convertible to seats.

LETTERS TO THE EDITOR

The Editor will be glad to receive for publication letters from readers on any aspect of Australian railways—past or present. Contentious matters likely to cause ill-feeling should, of course, be avoided, as also should attacks on railway administrations—these are best made in the press.

OUR FAN MAIL

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post in due course; please enclose a stamped, addressed envelope.

TALES OF THE RAILS

Contributions under this heading are invited from our readers. Tales may be humorous or otherwise, and should describe some incident or incidents on an Australian railway. Events overseas, however interesting, are not desired at present. Write clearly, of course, and on one side of the paper.

YOUR FAVOURITE PHOTO

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested. (Lack of space prevents the inclusion of a "Favourite Photo" this month).

QUESTION BOX

Questions on any aspect of railway operations, past or present, in Australia, may be sent to this journal. Mark the envelope distinctly "Question Box." If we don't know the answer, we'll endeavour to find out, and, if all else fails, we'll print your question and leave it to our readers. (It is regretted that direct answers cannot be posted to correspondents).

Readers' Wants

This service is available to bona-fide readers of "Railways in Australia," who may advertise their wish to buy, sell, or exchange railway literature, models, etc., or to obtain pen friends. A nominal charge is made of 1/- for five lines.

KEN MAGOR, 38 Gulliver Street, Hamilton, N.S.W., requires photos from anywhere concerning horse, steam, cable or electric trams; horse coaches, cabs or buses; motor and trolleybuses, trains. Will buy or exchange.

NOEL-GIPPS, 21 Herbert Street, St. Kilda, Victoria, is compiling a history of Melbourne's cable trams, and would be grateful for any information.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

AUGUST ISSUE

Our cover photo was, of course, of "Edward Henty," not "Sir Thomas Mitchell," as stated in the caption on page 2.

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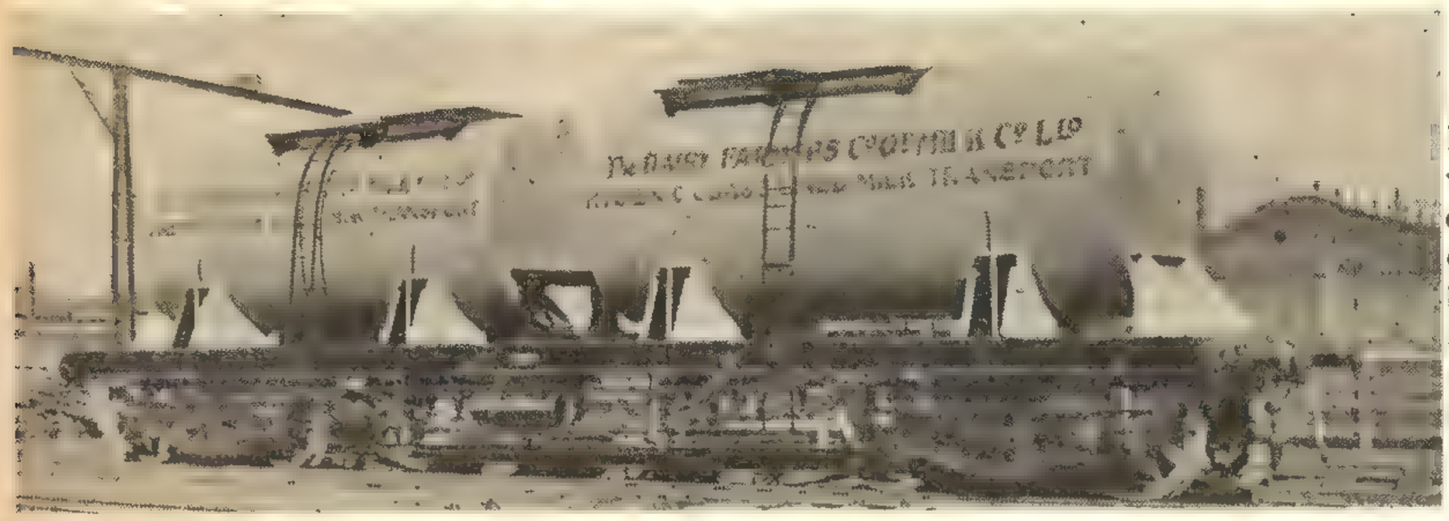
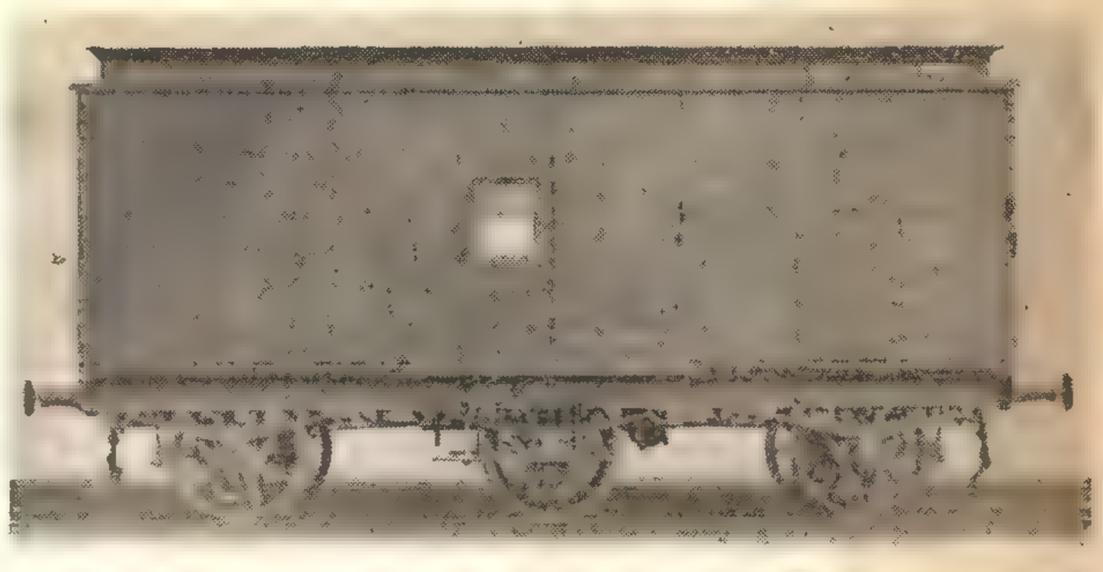
ROLLING STOCK PARADE



Four unusual cars form this month's Rolling Stock Parade. The long, low vehicle above is a 30-ton QB well wagon of the Victorian Railways. At left is a double-tank bulk milk wagon from New South Wales. Below are (left) a modern RU bulk wheat car from the same State and a six-wheeled F-class horse box of the Victorian lines. (Photos by courtesy V.R. and N.S.W.R.)

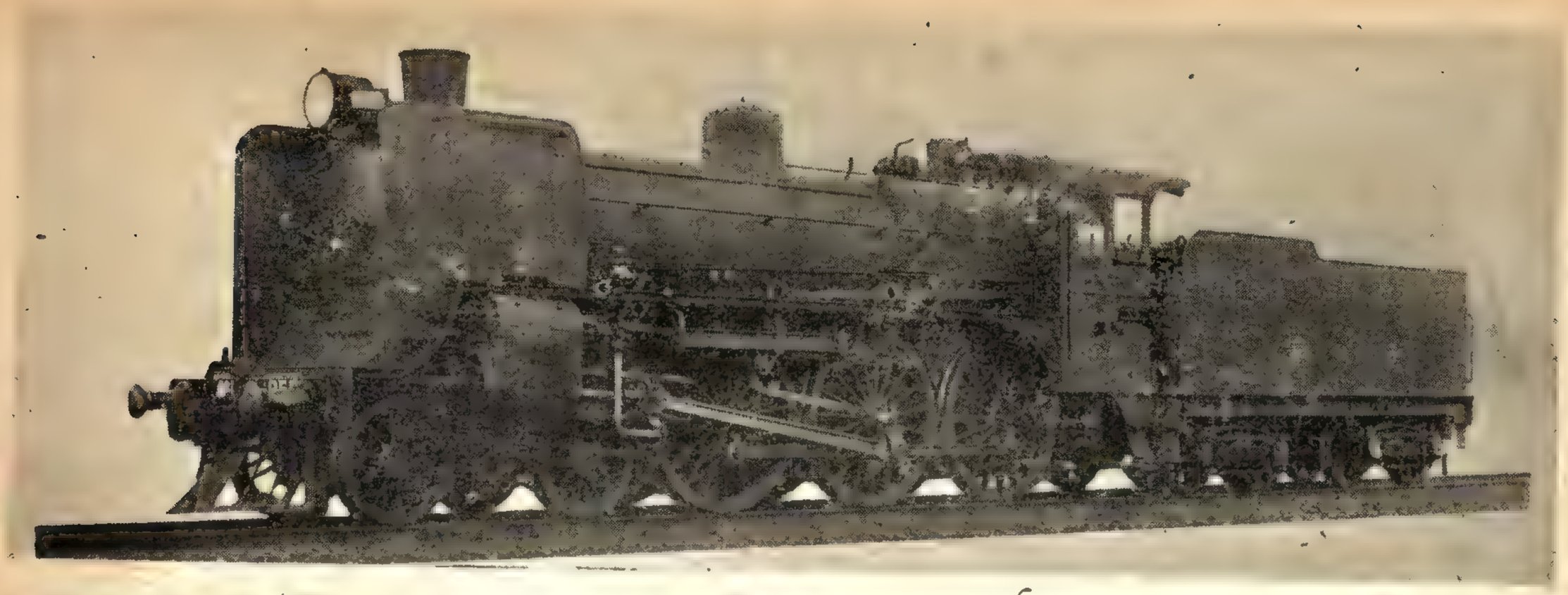


OVERSEAS ITEMS

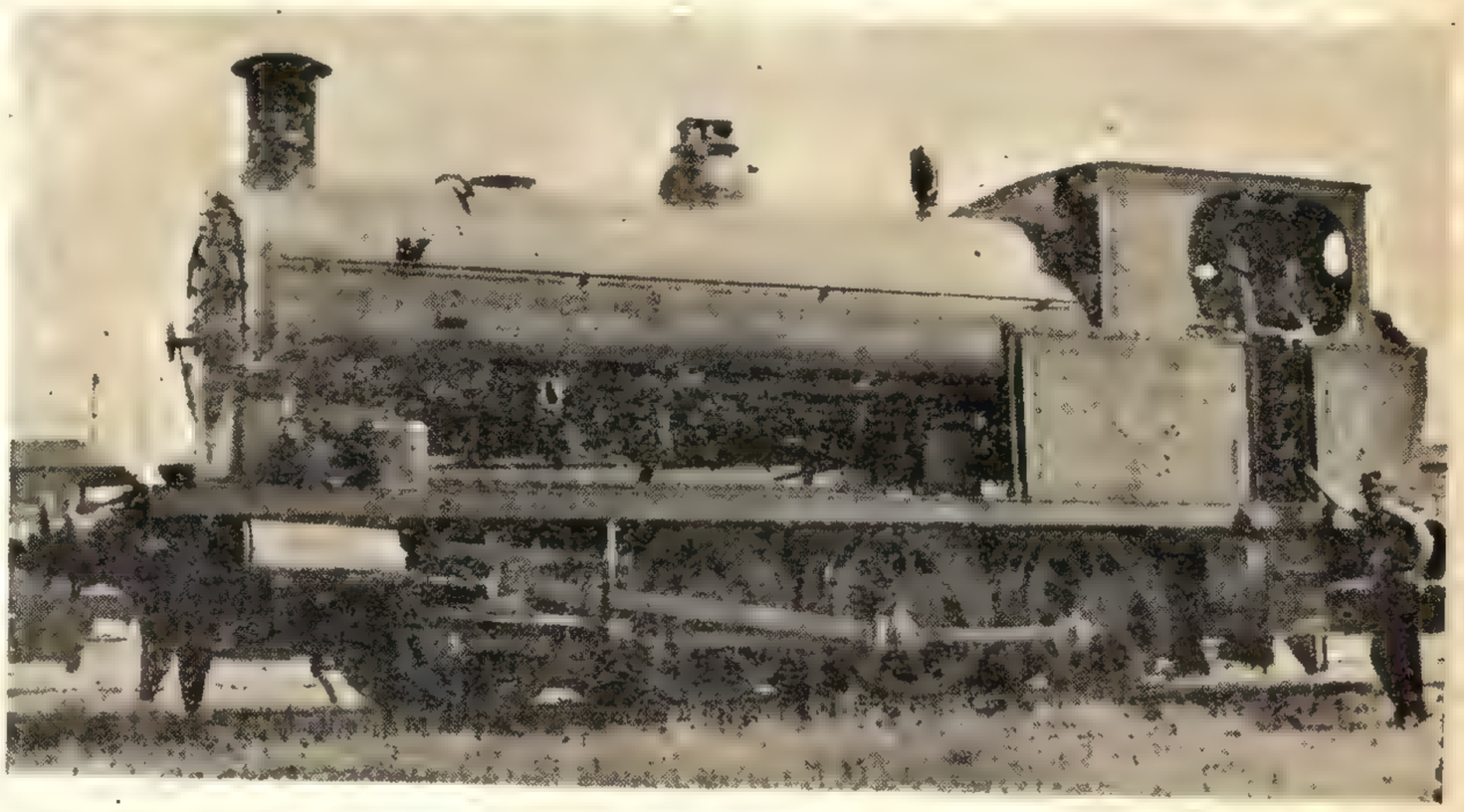
FINANCIAL PROBLEMS IN NEW ZEALAND

The handling of a record freight tonnage of 9,524,043 and 25,887,189 passenger journeys during the twelve months ended March 31, 1948, as recorded in the "New Zealand Gazette" No. 37, dated June 24, 1948, involved an expenditure of £15,090,091, but produced a gross revenue of only £13,964,280. Subsidiary services returned a net revenue of £485,786, so reducing the department's loss on the year's operations to £640,025, a deficit which has to be met by subsidy from the Consolidated Fund. In these circumstances, interest charges on capital — which would amount to some £3,000,000 — are not met. It is obvious that the comparatively moderate increases in railway passenger fares and freight charges effective from September 14, 1947, have been quite insufficient to overtake the rapidly mounting costs of operation. It may be recalled that the increased charges had hardly been introduced before there was an all-round increase in salaries and wages equivalent to 3d. per hour or £25 per annum. It is of interest also to note that railway operating expenses during 1947-48 have increased by just over 50 per cent. in five years, though there has, of course, been some increase in the goods traffic handled during that period.

In the circumstances, says the New Zealand Railway Observer, from which this extract is taken, it will be interesting to watch the steps which will have to be taken



Standard express passenger locomotive of the Victorian Railways for many years, the A2 4-6-0 is seen at the head of most types of trains. No. 955, shown above, is typical of the class in their present condition. Several have been fitted for oil-burning and a number have Boxpok driving wheels.
(V.R. Official Photo)



John Buckland took this neat picture of Australian Iron and Steel colliery locomotive "Mount Kembla." Formerly No. 9 of the South Maitland Railways, this 0-8-0T is shown at the Port Kembla exchange sidings in December, 1940. Avonside was the builder.

DIESEL ELECTRICS

Plans for British Railways

Though the nationalisation of transport has brought about an entirely new situation and their undertakings will shortly pass out of their control, the four main line railway companies have all prepared plans for improvements. There is little doubt that most of these will be carried into effect, for though the order of priority for the various schemes may possibly be altered, the new authority responsible for a nationalised transport system cannot ignore the importance of a really efficient railway system.

One of the big changes on the railways next year is likely to be the rapid development of Diesel-electric traction. During the war, great strides were made in America in the use of Diesel-electric locomotives, and these so impressed British railway experts that the Southern Railway Company decided last year that instead of electrifying their lines to the west they would rely on these locomotives to draw their main line trains. Three Diesel-electric locomotives are to be built at the company's workshops at Brighton. They will have a 1,600 h.p. Diesel-electric generator, and normally will work in pairs. It is expected that they will be capable of hauling the Atlantic coast expresses at a speed of 100 m.p.h., and of reducing the round journey run from Waterloo to Plymouth by three hours and a half. On a daily run on this route the Diesel-electric locomotive would use 2,000 tons of coal a year less than that consumed by a steam locomotive of the type now employed.

The L.N.E.R. also has decided upon a large-scale experiment with Diesel-electric locomotives. Twenty-five are to be constructed, also of 1,600 h.p., to be run in pairs, and it is intended to use them for main-line expresses between London and Edinburgh, and possibly Aberdeen. One of the great advantages of the Diesel-electric locomotive is that it can be employed for a larger number of hours a day than a steam locomotive, and it is estimated that the Diesel-electric locomotives will be able to cover 2,250,000 train miles a year. Their employment will mean a great advance in the size of the motive power units on the East Coast route to Scotland. The modern L.N.E.R. Pacific steam engines have been among the largest

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and most powerful on the British railways and for nine years have held the world record for steam traction, but it is quite possible that the 126 m.p.h. achieved by the Pacific engine "Mallard" may be exceeded. In America speeds of 120 m.p.h. have been registered with Diesel-electric traction.

The L.N.E.R. Diesel-electric locomotives will probably have 24 wheels, 16 being "drivers," and will have a starting traction effort of 90,000 lb., much more than double the 37,000 lb. of the Pacific locomotive. Special maintenance and servicing arrangements are being planned with the main depot near Edinburgh and a subsidiary depot near King's Cross.

The L.M.S. some time ago announced its experimental programme for the construction of Diesel-electric locomotives for use on main-line passenger work, including the services on the West Coast route from London to Scotland. In addition to the units of 1,600 h.p. which can be run in pairs for long distance express services or separately for fast light trains, the company is building Diesel-electric locomotives of 800 h.p., capable of speeds of 60 m.p.h. for branch and cross-country passenger and goods trains. It has also a number of 350 h.p. Diesel-electric locomotives employed on shunting work. The first central workshop to be provided by the L.M.S. to be used exclusively for the construction, maintenance, repair and testing of Diesel-electric locomotives has now been brought into use at the Derby locomotive works.

The L.M.S. is carrying out a number of experiments this year on new locomotives which are being built, the main aims being fuel economy, greater availability, a higher annual mileage, lower maintenance costs, and smoother running. Some of the new steam locomotives are being fitted with roller bearings, some are being provided with the Caprotti type of poppet valve gear, half of which for purposes of comparison will be fitted with roller bearings and half with standard bearings. A mobile testing plant train is being introduced to enable locomotives to be tried out over long distances at constant speeds, irrespective of changes in gradients, curves, or wind resistance.

At the outbreak of war, work was suspended on the important electrification which the L.N.E.R. had in progress on the Manchester to Sheffield main line, which carries heavy traffic. Now it has been decided to resume work, but it is likely to take at least four years to complete. This is one of the most difficult lines to operate in the country, and the electrification will enable both passenger and freight services to be accelerated and, it is estimated, will reduce coal consumption by 100,000 tons a year. There are heavy gradients and the line passes under the Pennine ridge through the Woodhead tunnel, which is more than three miles long. This tunnel is to be duplicated. The overhead line conductor system using direct current at 1,500 volts is to be used. Electric locomotives of 1,870 h.p. will haul all trains between Manchester and Sheffield, while the suburban service between Manchester, Hadfield and Glossop will be provided by multiple and electric trains.—From "The Times Review of Industry, September, 1947."

Continued from Page 4

TASMANIAN GOVERNMENT RAILWAYS

It is reported, so far without details, that this system has purchased the remainder of the freight rolling stock surplus remaining on the North Australian Railway through the Commonwealth Disposals Commission. About 90 units, comprising vans, tank cars and flat cars, all fitted with vacuum brake equipment are involved.

The former Marrawah Tramway 0-6-0 Saddle Tank Baldwin locomotive "Big Ben," which was recently fitted with side buffers and standard draft gear at Launceston shops, has been sent to Parattah to work the short Oatlands Branch, which will continue for the present to be operated on a restricted basis for freight traffic, pending decision by the Government on the recommendations of the Royal Commission which recently reported in favour of its closure and dismantling.

The Apsley branch line from Brighton Junction to Apsley was dismantled during the latter part of the financial year 1947-48, reports Mr. K. Flood of Launceston.

QUEENSLAND RAILWAYS

To meet the continuing motive power shortage and cope with expanding traffic needs the Queensland Railways are seeking bids from locomotive builders in Australia and Britain for twenty additional B-18¼ class standard Pacific locomotives. This successful utility engine, first introduced in 1925, now totals 83 engines in the class, most of which have been built by Walkers Limited, Maryborough and the rest by Ipswich shops.

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS

The Department has applied to the A.S.G. Industrial Board to authorise the operation of A.S.G. locomotives over the following routes:

Narrogin-Corrigin-Merriden
Narrogin-Kondinin-Merriden
Narrogin-Collie

At present A.S.G. locomotives are confined to the Eastern Goldfields main line, Coolgardie-Esperance line and East Perth-Brunswick Junction-Collie line.

Five of the A.S.G. locomotives have been converted to oil-burners with moderate success during past six months. Nos. 44 and 64 are specifically mentioned as having been recently tested by the A.S.G. Industrial Board. Twenty-five sets of steam power reverse gear have been ordered, presumably for fitting to A.S.G. locomotives, following the experimental fitting of an Alco power reverse gear obtained recently from the Tasmanian Government Railways, where seven of the eight A.S.G.s on the register have been successfully equipped. (J.L.B.)

FRASER ISLAND TIMBER TRAMWAYS, Q.:

Fraser, or Great Sandy Island, which lies off the coast of Queensland some 150 miles north of Brisbane, has been the scene of at least four now-abandoned timber tramways, one of which was reputed to have been of standard gauge. Tracks across the island follow portion of the old Government forestry route, along the roadbed of which parts of gradings and curvature are still discernible. This particular tramway once possessed the locomotive now on the Fairymead Mill railway (near Bundaberg) which began as QGR No. 7, an 0-4-2 built by Neilson in 1865. In 1883-90 this little engine, together with others similar, was rebuilt as a tank engine with the unusual 2-4-4 wheel arrangement, and was subsequently sold to a Fraser Island milling tramway, which also possessed an unknown saddle tank locomotive. (K.R.)

(Contributions to this section should be sent to Mr. J. L. Buckland, C/o Railways in Australia.)

Railways in Australia
and
ARLHS BULLETIN
The Magazine about Australian Trains

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RAILWAYS IN AUSTRALIA— NEW EQUIPMENT VITAL

BY OUR NEWS EDITOR

Since 1939, freight tonnage carried by the Victorian Railways alone has increased by 26 per cent. and freight train ton miles by almost 30 per cent. Similar conditions are reflected in the traffic returns of the other railway systems of Australia. They are a natural corollary to "full employment" and the steadily rising tempo of industrial development. Such conditions throw into relief the patently obvious fact that development of this Commonwealth is being retarded because of difference in track gauge. In short, because we have no **national** transportation system, all development — industrial, economic and political — is being set back by two salient factors . . .

1. Lack of a uniform gauge, nation-wide railway system, because existing state-owned centralised systems are inadequate, ill-equipped and, in many respects, antiquated and are incapable of meeting to-day's transportation needs to-day . . . let alone to-morrow's —
2. Insufficient, inadequate and unsuitable motive power and rolling stock are slowly but surely strangling long-term industrial development. Shortages of man-power; shortages of steel (and most other raw materials); shortages of coal — key to the whole situation is coal — all add up to inadequacy of railway transportation.

No nation, particularly an expanding one like Australia, can hope to prosper without an adequate, modern transportation system. The backbone of that transportation system continues to be the railway system. For proof of that consider the United States of America — home of motor transportation. Transportation is the life-blood of the nation. Australia's inadequate transportation system is tantamount to a hardening of the arteries. Australian railways to-day stand on the threshold of their greatest test; can they handle the continually increasing record traffic that industrial Australia demands in 1948 and 1949; . . . ?

Given the proper tools they can. In the past they have not had the proper tools; they are not getting them at present. The vast bulk of Australian railway freight cars are of the "general utility," open gondola type — used for everything and anything; from coal to cord-wood; from sawn timber to sand. Covered by a crude tarpaulin they are "weather proof" to a degree and as such are used for conveying much of the nation's total tonnage of perishable merchandise — hardware, softgoods, food and drink — exposed to heat and cold and damp and to the organised activities of pilfering gangs.

Only in the State of South Australia has the "open wagon" been largely supplanted for all but low grade bulk consignments by the modern all-weather box car and the ventilated louvre car; locked securely against the depredations of pilferers. A small proportion of suitable freight consignments is handled in covered cars in all States, but the predominantly greater tonnage of all Australian railway freight is still handled in the "general purpose" open car. Even coal, most vital of present day railway freight, is almost wholly hauled in small capacity gondola cars (excepting coal for export to other States from New South Wales ports such as Newcastle, where even cruder and less efficient methods are still used) and except for a small proportion of the total stock of such cars on the New South Wales Railways, they have to be labori-

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ously loaded by hand; having no built-in hopper discharge doors. Why? Surely there are enough examples of modern bulk handling freight cars for a variety of specialised uses (some even in Australia) to cause general adoption of specially designed high-capacity cars for freights such as coal, wheat, briquets and even cement?

What Australian railways most sorely need, apart from urgent standardisation of track gauge, are fleets of standardised covered and uncovered hopper cars of an average capacity of 40-50 tons, 30-ton box cars, 30-ton louvred cars, supplemented by 25-ton refrigerator cars for fruit, meat and vegetables, fish, etc. There is sufficient continuous bulk traffic to keep cars in these categories fully employed. Modern bogie cars can be

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Decorating this month's cover, Queensland Railways' C17-class 4-8-0 makes a fine picture as she hauls a Pinkenba suburban train. Built in 1938 at Ipswich Shops, No. 895 is one of the "improved" C17's, with larger tenders, new cabs and boiler mountings. Although really goods locomotives, these sturdy 3'6" gauge machines are often seen on passenger trains. Photo by Ken Rogers.

WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

VICTORIAN LOCOMOTIVE ORDERS.

A total of ninety steam locomotives have been ordered for the Victorian Railways. Fifty will be imported from Britain and forty will be constructed in Australia, announced Col. W. S. Kent Hughes, Victorian Minister for Transport, on September 8. Fifty modified N-class 2-8-2 light line freight locomotives are to be built by the North British Locomotive Co., Glasgow, and an additional twenty of the same type are to be built by the Clyde Engineering Co., Granville, N.S.W. Clyde will also build twenty of the new R-class 4-6-4 main line passenger locomotives, after the pattern engine (No. 500) being built at the Newport Shops. The Clyde deliveries should commence within 18 months, and continue at the rate of two per month. North British deliveries are expected to amount to six a month from the second quarter of 1950.

Decision to import locomotives from overseas (the first since 1912, apart from two narrow gauge Garratts in 1926) followed failure of the Government's plan to buy diesel-electric locomotives from the Clyde-Electromotive organisation because of dollar shortage. Both orders are the first the Victorian Railways have placed with either builder, although Dubs & Co. (now absorbed in the North British Locomotive Co.), supplied two small crane locomotives in 1883.

Principal dimensions and specifications of the two classes are set out in the accompanying table.

Class R engines will have a complete installation of roller bearings on all axles with forced feed lubrication. They will be fired by an MB-1 mechanical stoker. Both

BROWN COAL DEVELOPMENT SETS PROBLEM FOR VICTORIAN RAILWAYS.

The only practicable way the Victorian Railways expect to be able to handle the rapidly expanding brown coal and briquette traffic on the Gippsland main line is by regrading, relocation and duplication of the track, stated the Chairman of Commissioners, Mr. N. C. Harris, recently in evidence before the Parliamentary Public Works Committee investigation. Plans have been made, legislation passed, and a start has been made for the immediate regrading and duplication of the heavily-graded 18 miles between Longwarry and Yarragon. This will cost an estimated £760,000. Concurrently, reorganisation of Dandenong freight yard and provision of refuge sidings at Springvale will be undertaken at a cost of £18,000.

Ultimately, the duplication in stages between Dandenong and Longwarry and Yarragon and Morwell will be completed, together with the long-planned deviation from Moe through Yallourn. Construction work on the first stages of this deviation (authorised at a cost of £180,000), which will eliminate much of the heavy ruling grade of the present location through the Haunted Hills, has already commenced. Further investigation of the proposed major relocation of the line between Yallourn and east of Morwell will depend upon the outcome of negotiations between the Railways Department and the State Electricity Commission.

A large new marshalling yard and locomotive terminal facilities at Yallourn are part of the present works in progress. Federal Government refusal of dollars for the purchase in America of components for eighteen diesel-electric road locomotives, which had been tentatively ordered from the Clyde Engineering Co., has made the Victorian motive power position more difficult, as 18 diesels (equivalent to approximately 32 steam locomotives of comparable capacity — X-class) would have made a substantial addition to the heavy freight and general service pool. With the production of raw brown coal for industrial purposes expected to exceed one million tons in 1949-50, the Victorian Railways are facing a critical problem in how to transport this tonnage (together with the expanding briquette production — at present 600,000 tons a year), with insufficient locomotives and freight cars. Orders have already been placed with Australian and British locomotive builders for 70 modified N-class 2-8-2 locomotives (see details in this issue), and inquiries are being made in Australia and overseas for freight cars, but, as there is little hope of any substantial deliveries in under two years at the earliest, the position is becoming increasingly critical.

Freight tonnage hauled by the Victorian Railways in 1947-48 has increased by 26 per cent., compared to 1938-39, and the trend is sharply rising. Therefore, there is need for additional heavy freight locomotives, and it is anticipated that if labour and materials can be obtained, twenty more X-class 2-8-2's will be required within the next five years. In the interim, the demand can only be met by maintaining in service, at increasing cost, over-age locomotives which would normally

be withdrawn and scrapped. By 1952, the first unit of the new Morwell briquette plants will begin production. This will open a new era which will result in eventual trebling of present briquette production, and with it the demand for railway transportation. General freight traffic is also increasing on the Gippsland line, which already is handling a greater ton-mileage than either Bendigo, Seymour or Geelong trunk lines. Electrification between Dandenong and Traralgon (97½ miles by present mileage) within ten to fifteen years may yet prove to be economically feasible.

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classes will have an all-steel boiler and A-6ET air brake equipment. R-class 4-6-4's will gradually replace A2-class 4-6-0's as the standard main line passenger locomotives of the Victorian Railways. They are designed for a modern dual service role in either passenger or fast freight service. Both designs are convertible to standard gauge.

	Class R 4-6-4 New design	Class N 2-8-2 Modified dsgn.
Cylinders (2 outside)	21½ x 28	22 x 26
Boiler pressure	210 lb.	175 lb.
Driver diameter	73 in.	54 in.
Tractive effort (85% B.P.)	32,100 lb.	28,600 lb.
Valve gear	Walschaerts	Walschaerts
Weights (roadworthy)—	Tons cwt.	Tons cwt.
Engine	105 0	77 9
Tender	82 8	47 4
Total	187 8	124 13
Length (over couplers)	77 ft. 3¼ in.	66 ft. 8⅝ in.
Wheelbase (total)	67 ft. 0 in.	57 ft. 4⅝ in.
Maximum axle load	19½ tons	13½ tons
Grate area	42 sq. ft.	31 sq. ft.
Heating surface—	Sq. ft.	Sq. ft.
Firebox (incl. comb. chamb., arch tubes and siphons)	285	203
Tubes	1958	1250
Total evaporative	2243	1453
Superheater	464	324
Combined total	2707	1777
Tender capacity—water	9000 gal.	4700 gal.
coal	6 tons	6 tons

Commonwealth Railways. — A four-mile spur line between Pimba and Woomera rocket range railhead has been opened for pre-paid freight traffic.

English Diesels for N.S.W.R.— Ten 1700 b.h.p. diesel-electric road locomotives have been ordered from the English Electric Co. for dual service on the New South Wales Railways. This firm is also building ten 350 b.h.p. diesel-electric shunting locomotives for Victorian Railways.

Victorian Railways.—Train staff and ticket system of working was instituted in place of train section order system between Yarrawonga and Oaklands on August 16, 1948. Rennie may be opened as a special block post when required. An accelerated service giving both first and second class accommodation in a diesel rail car commenced on Aug. 24, 1948, between Ouyen and Pinnaroo, S.A.

Diesel rail cars are now also in operation between Murchison East-Rushworth - Girgarre, Melbourne and Heathcote and Ararat-Hamilton, providing accelerated services for local passenger and parcels traffic. Of these services, the Ouyen-Pinnaroo and Melbourne-Heathcote runs are being operated by the first two 153 b.h.p. cars designed to haul trailer cars. No trailer cars have yet been completed, however.

Queensland Loco. and Rolling Stock Orders. — Queensland Railways are seeking bids for the supply of 1000 sets of cast steel spoked wheels and axles with 7 in. x 3 in. journals. Tenders for the supply of 300 bogie steel flat cars of class HJS are also sought. According to information supplied by Mr. K. Rogers, of Brisbane, the following locomotives and rolling stock are either on order, or authorised for building for the Queensland Railways.

Locomotives:
- 20 B-18¼ class 4-6-2's
- 52 C-17 class 4-8-0's
- 12 DD-17 class 4-6-4 tanks
- 10 Garratts (4-8-2 + 2-8-4)
- 26 "Improved" B-18¼ class
- 6 New CC-17 class 2-8-2's

Rolling Stock:
- 400 steel hopper cars (4-wheel)
- 200 steel 4-wheel gondola cars
- 55 steel bogie baggage cars (ventilated)
- 25 steel bogie tank cars
- 100 bogie cattle cars
- 12 suburban passenger cars

Most interesting of the new locomotives are the proposed new CC-17 class, which Mr. Rogers states is to be an entirely new design with a wide firebox and bar frames and "other American features," probably resulting from experience of the American AC-16 class 2-8-2's bought during the war. It is believed that alternative designs for a 4-8-2 and 2-8-2 wheel arrangement have been under consideration. Possibly a new passenger engine may be evolved as a result, but the "improved" B-18¼ engines will be basically the same as the existing class of 83 Pacifics, with enlarged tender capacity and other detail modifications, such as have been incorporated in successive batches of both C-17 class 4-8-0's and B-18¼ class 4-6-2's since their introduction first in 1924 and 1925, respectively.

Queensland Loco. Number Allocations. — The following groups of road numbers have been allotted to new locomotives at present under construction, writes Mr. K. Rogers:
- 929-948 inc. to 20 C-17's building at Clyde Engineering Co.
- 949-954 inc. to 6 DD-17's building at Ipswich Shops.
- 955-960 inc. to 6 C-17's building at Walkers Ltd.
- 961-1000 inc. to 40 C-17's building at Walkers Ltd.

Adelaide Suburban Electrification. —The South Australian Government is investigating the possibility of electrification of 108 track miles in the Adelaide suburban area of the South Australian Railways at a cost of £3,824,000. Proposed electrification would include lines to Marino, Henley Beach-Semaphore-Outer Harbour, Northfield and the South track to Belair and possibly Bridgewater.

New Engines 3823 and 3824 were delivered by Cardiff and Eveleigh Shops of the New South Wales Railways, respectively, during June, 1948. Engine 3817 was involved in the Rocky Ponds accident on June 30.

Boxpok Driving Wheels were fitted to two additional A2-class 4-6-0's of the Victorian Railways—No. 986 in July, 1948, and No. 992 in August, 1948.

Cab-Operated Blow Down Valves with centrifugal mufflers located under the right hand (fireman's)

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THE WAITING ROOM—

Tails of the Rails

Contributions under this heading are invited from our readers. Tales may be humorous or otherwise, and should describe some incident or incidents on an Australian railway. Events overseas, however interesting, are not desired at present. Write clearly, of course, and on one side of the paper.

MY FELLOW PASSENGER
by E.S.

The Up goods from St. Mary's was making good time. Leaving Cullenswood at 5.14, 19 minutes early, Q19 made a good run to Avoca, where I helped the guard and porter load some machinery. My fellow passenger looked on, disinterested.

According to the W.T.T., that notorious guide to form, we were due into Llewellyn, an unsignalled, unattended and ungodly staff station, at 7.30 p.m., to cross the Down motor.

My last experience on this line was in wood-burning 1940, when we waited at Avoca over an hour for this same motor. The missed connection at Conara Junction resulted in a trip to Launceston in a disabled steam car (SP5) going for repairs behind A5.

To-night, it was different. My three-course dinner at 2 p.m. had been eaten in eight minutes and I was beginning to feel the need for more ER. I knew that the sooner I got to Conara, the more certain was my evening meal, hence my help with the van goods. We left Avoca half-an-hour early and were making a good run toward Llewellyn, and my F.P. at last began to show signs of interest in the train's progress. He must have been hungry, too. At Llewellyn, he made his only contribution to the conversation with: "I wonder what the hell they're doing here?"

Of course I knew! I knew that the guard had to get a staff telegram to go to Conara, because the staff was at Conara, ready for No. 8, the rail motor. So, in sufficiently "lay" language as not to confuse him, I told him all about how the staff had to be locked away and this order, called the Staff Telegram, issued as authority for our train to leave in the absence of the staff.

My F.P. resumed thoughts of his dinner, and remained silent for the rest of the trip. At Conara Junction, the rail motor was waiting and left hurriedly after the formalities.

I found my fireman friend and he came back to the Refresh. to watch me eat. My F.P. was there too, and enjoying his meal; he nodded to us. "Do you know that bloke?" I asked. "Yes," said the fireman, "He's the District Traffic Inspector."

WHEN A GOOSE IS NOT A GOOSE
A True Tale of the Queensland Railways
by P. J. Honeyman

Some years ago an incident occurred which shows how the long arm of coincidence can involve an innocent man in a lot of trouble.

A friend of mine, a driver who is stationed in Gympie, was working the Up Mail to Brisbane one Xmas Eve, and, when at the end of his run, he went into town to meet a few of his cobbers and have a Xmas drink at the pub favoured by the running men, he was astonished and pleased, as you can well imagine, to hear that he had won a goose which was being raffled by the publican for Xmas. Naturally he celebrated his victory as a winner should, and when closing time came, he put the live goose in a bag, tucked it under his arm, and headed for the quarters. On the way, however, he was intercepted by the Law, who were very interested in the contents of the bag, and who, when they found it was a goose, marched him forthwith to the local police station. Naturally he was beside himself with indignation, and wanted to know just what the dickens was going on (in true railway style and expression) and he was informed that he was suspected of having stolen goods in his possession—namely the goose. However, when he managed to explain things he soon convinced the Law that he had obtained the bird legitimately, and he was allowed to go on his way. That ended that.

However, when he returned to his home depot the following day and was putting his gear away in his locker in the shed, he, quite by accident, overheard a couple of his workmates discussing a goose that they had "found wandering by itself on the side of the line" when they were coming home from Brisbane on the Mail the day before. Immediately he was struck by the awful truth, and realised that when the owner had seen the goose being taken care of and had phoned the police, she had evidently told the police that the driver on the Up train had made off with her goose; she, however, meant the train going to Gympie, being ignorant of railway parlance, which terms an "UP" train as one working to a capital city, thus misleading the police, and losing the goose into the bargain.

Our Fan Mail

The Editor,
Dear Sir,

Though the courtesy of a friend in New South Wales, I received a copy of your excellent publication, and as I'm a rail fan myself (as well as being a railway employee) I'm very anxious to see the magazine go ahead like the proverbial "house afire". I remember Frank Shennen's efforts 10 years ago, in fact I still have most of the magazines printed by him on my files. It was certainly a great pity that it did not keep going, but as you said, these publications cannot run on air.

I am therefore enclosing postal notes to the value of 18/- for annual subscriptions to "Railways in Australia" and "Tram Tracks". You can also put me down for one copy of the "Australian Tramway Album".

Wishing you all the best for yourself and your magazines.

Yours sincerely,
R. J. HONEYMAN
Gympie, Queensland.

J.W. Simpson, Asquith: Your query re number of pages answered last month. There is nothing definite regarding the N.S.W.R. diesels, although it has been suggested that they will operate the Brisbane Express, via Grafton. The V.R. main-line jobs are not likely to be in service for some considerable time as fresh tenders will have to be called. They will probably run on the Overland route.

The Editor,
Dear Sir,

Although I did not think it possible, the improvement in this issue when compared with that for July is most marked and I really do wish you well with future issues. I wish to support Mr. Buckland when he says that your section of the magazine should concentrate on the railway happenings of to-day, whilst the Bulletin section would carry on as usual with the older or more historical items.

The accident referred to on page 18 (August issue) was that at Leighton Buzzard, when the "Royal Scot" was derailed at speed, when being diverted from the fast to the slow lines, and three passengers and three railwaymen lost their lives as a result.

Yours sincerely,
LESLIE POOLE
East Malvern, Victoria.

R.J.H., Gympie: Thanks for photos and material — all most welcome; story being used. Not anxious for overseas photos at the moment, as our readers seem to prefer Australian pix — we cannot supply both just yet, though we have hopes for the future.

K.J.C.R., Albion; Thanks for the photos; have used several this issue. The accompanying information was most helpful — we are rather hazy on details from your State.

Jack Shennan, Launceston: Good wishes much appreciated; also the photos, which are just what we want and will be used probably next issue.

Noel Thorpe, Sans Souci: Your favourite photo featured. Others will be used in "Tram Tracks" in near future. Many thanks. Will write direct soon.

Question Box

Questions on any aspect of railway operations, past or present, in Australia, may be sent to this journal. Mark the envelope distinctly "Question Box." If we don't know the answer, we'll endeavour to find out, and, if all else fails, we'll print your question and leave it to our readers. (It is regretted that direct answers cannot be posted to correspondents).

F. Murray, Casino, N.S.W., asks: "... the maximum speed reached on the Victorian Railways."

ANSWER: The maximum speed recorded officially is 89 m.p.h., which was reached by "Spirit of Progress" during trials on the North-Eastern line. A similar speed is unofficially stated to have been attained in recent years in normal running. Speeds of 85 m.p.h. have been reached by trains, including the "Spirit," during trials on the Geelong line. (Maximum permissible speed on the V.R. is 70 m.p.h.).

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

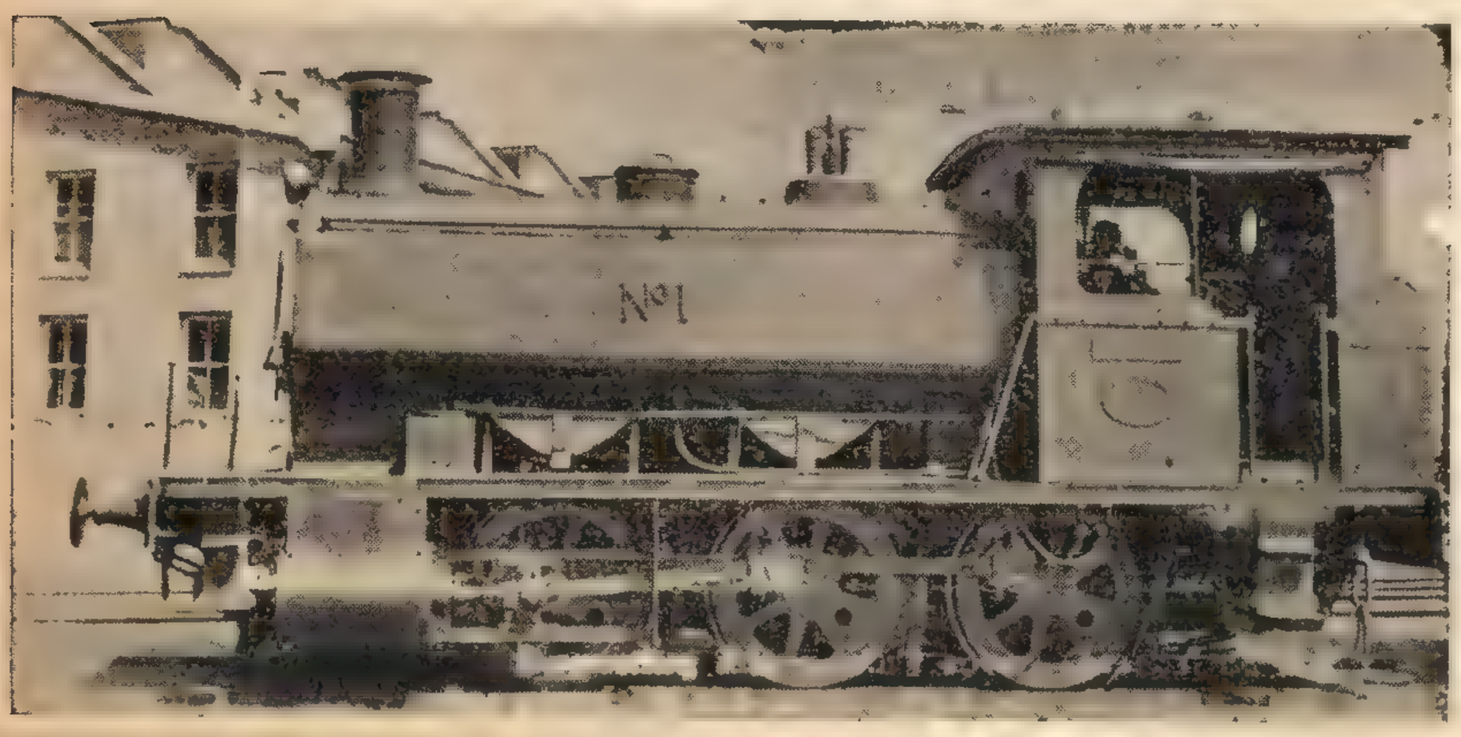
MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

Readers' Wants

This service is available to bona-fide readers of "Railways in Australia," who may advertise their wish to buy, sell, or exchange railway literature, models, etc., or to obtain pen friends. A nominal charge is made of 1/- for five lines.

Your Favourite Photo



LETTERS TO THE EDITOR

The Editor will be glad to receive for publication letters from readers on any aspect of Australian railways—past or present. Contentious matters likely to cause ill-feeling should, of course, be avoided, as also should attacks on railway administrations—these are best made in the press.

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park. Addresses will be found on page one.

OUR RETAILERS

"Railways in Australia" can be obtained from a number of retailers and arrangements are being made for nation-wide distribution. Place a standing order now, or, if this is not yet possible, send a subscription direct to the publishers, TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5, Victoria.

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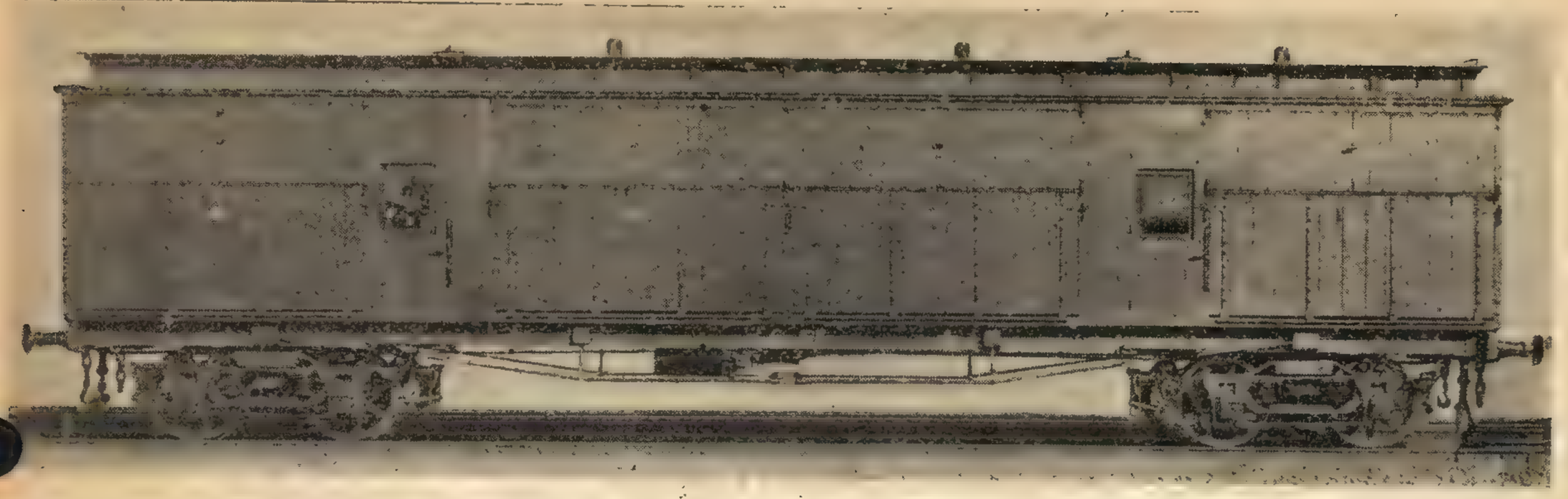
TOOWOOMBA:
- Aircraft Hobby Shop.

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

From Port Kembla, New South Wales, comes this month's Favourite Photo, the work of reader Noel Thorpe. Steam loco. No. 1 (there is also an electric with the same number) of the Electrolytic Refining and Smelting Company, this little 0-6-0 saddle-tank was out-shopped by Andrew Barclay & Sons in 1895. The colour scheme is green, with polished copper chimney cap and base; the number is of cast bronze, recessed and filled with blue enamel. Noel took this photo in February, 1948, on the Co.'s weigh-bridge siding.

ROLLING STOCK PARADE



Big brother to the Victorian Railways' F-class horse box depicted in last month's Rolling Stock Parade, is this FF-class bogie vehicle. On the right is the first of the 102 h.p. diesel rail cars for light branch line working. (Both photos are official V.R. prints.) The diesel was at Jolimont, hence the "spark" accessories visible.

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side of the cab have been fitted recently to Victorian Railways A2-class Nos. 969, 987, 922 and 994, similar to that fitted to N-class No. 126 and some X-class engines. They may be readily identified by a steam exhaust pipe leading up the side of the cab on the fireman's side.

New South Wales Railways.—Fifty additional top-bunker MRC type express bogie refrigerator cars have been ordered from Tullochs Phoenix Foundry, Rhodes, N.S.W., at a cost of £256,950. Tests may be made of a new type of refrigerator car, incorporating its own refrigeration equipment. Cars of this type are now in use for transcontinental perishable freight traffic in the United States, enabling long non-stop express runs to be made without stop-overs for re-icing cars en route. Details and plans of such cars were brought back from America by Mr. J. V. Green, Assistant Chief Traffic Manager of the New South Wales Railways.

N.S.W.R. Commissioner Retires.—After completing more than fifty years' service with the New South Wales Railways, Mr. T. J. Hartigan, C.M.G., retired on September 30, 1948, after sixteen momentous years as Commissioner for Railways. During his term as Commissioner, the N.S.W.R. have made many notable advances in services, equipment and technique, until they stand to-day pre-eminent in the forefront of railway transportation development in Australia. Mr. Hartigan is succeeded by Mr. F. C. Garside, who has been Assistant Commissioner since 1932. Mr. Winsor, Staff Superintendent, has been appointed Assistant Commissioner.

"Spirit of Progress" has stopped at Benalla and Wangaratta to pick up and set down inter-system passengers in each direction on Sundays since August 22, 1948.

The Railway Dam at Naracoorte, S.A., is to be filled in with 20,000 cub. yards of earth and new livestock trucking facilities will be established on the site. This is necessary for the reorganisation of yard facilities at Naracoorte in connection with the conversion of the South Eastern Division of the South Australian Railways from narrow to broad gauge. Work on the earthworks, culverts and bridges is in progress, and materials such as new sleepers and heavier rails are being assembled. Some re-railing and re-sleepering has already been undertaken, but the complete changeover will not be completed for several years.

Commonwealth Railways are seeking tenders for the transport overland from Larrimah, N.T., to Alice Springs of three NFB-class 2-6-0 locomotives (formerly SAR Yx-class) from the North Australian Railway. The locomotives will be used for shunting service and emergency stand-by duty on the Central Australian line.

Passenger Services between Rushworth and Colbinabbin were discontinued by the Victorian Railways from August 13, 1948. Freight train service will continue for the time being. The Benalla-Tatong branch line was closed for all traffic on June 30, 1947, but the line has not yet been dismantled.

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operated safely at high speed — at speeds in excess of most passenger train speeds in this country to-day — thus reducing the total numbers of cars required and increasing track capacity — a vital factor with long mileages of single tracks operating at close to saturation frequency, such as is the case on many Australian trunk lines to-day.

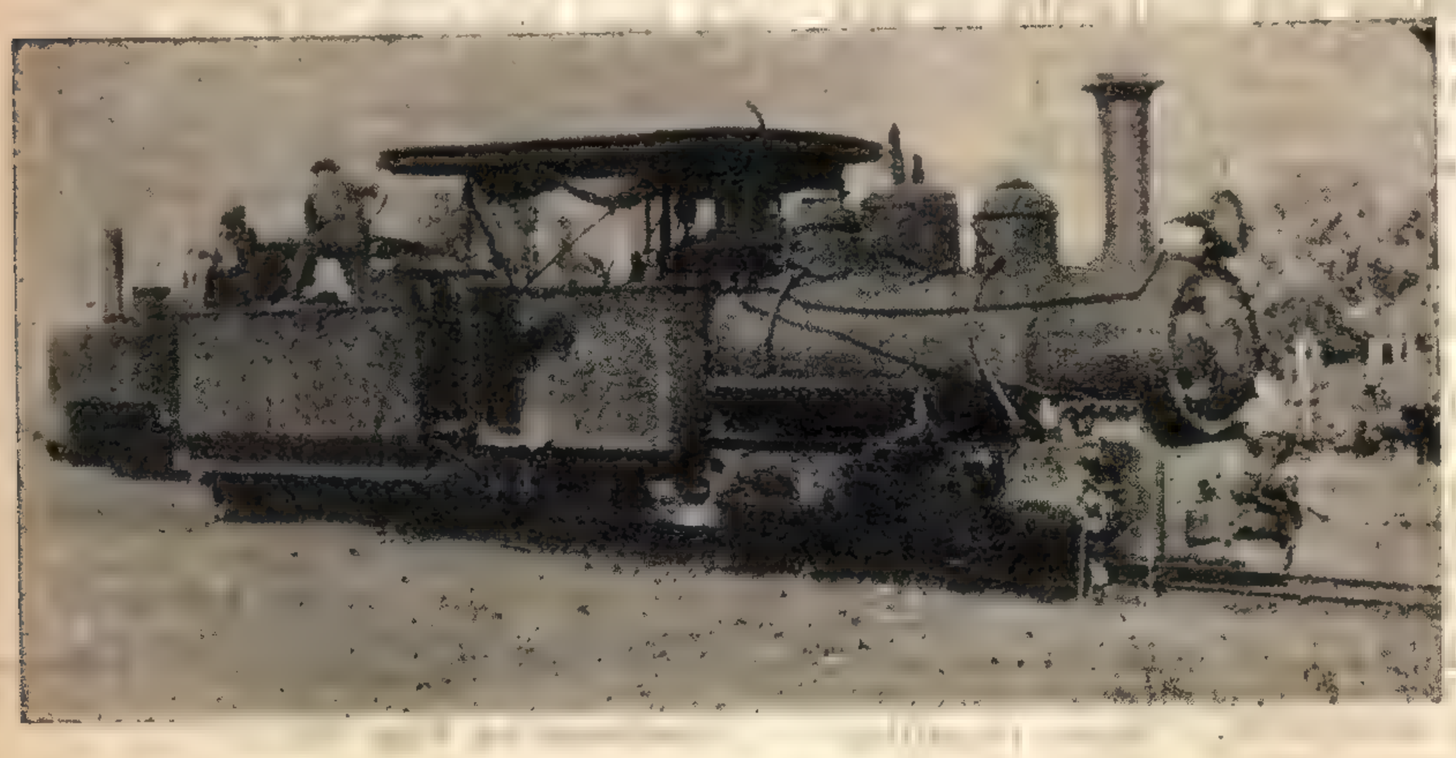
Concurrently, adequate, modern motive power (whether it be steam, diesel or electric) is an urgent requirement if Australian railways are to keep pace with the transportation demands of this expanding nation. Yes, and operating methods must be streamlined, too. Extended use of teleprinters for waybilling, marshalling and classification yards and Centralised Traffic Control, perhaps radio-telephony — all extensively used in progressive countries, must play their part in revolutionising railway operations in Australia. The examples of Canada and the United States of America are before us; we have experimented to some extent with modern, specialised equipment and operating methods in New South Wales; to a lesser extent in Victoria and to a greater extent only in South Australia, but limitations of inter-change of equipment and operating methods, freight rating, etc., are equally as stultifying as differences in track gauge. There can be no recognition of State borders in modern transportation.

The Commonwealth Government's Division of Railway Standardisation, under the directorship of far-seeing Sir Harold W. Clapp, K.B.E., has planned wisely and well for a complete new deal for Australian railway transportation. Standardisation must go further than track gauge, it must apply to every aspect of railway operation and management and that can only be achieved by a National set-up. The diversity of equipment, operating methods, rolling stock and locomotive types in Australia to-day must go. Only in South Australia has there been any attempt to develop standardised designs of freight cars suitable for nation-wide application. In passenger equipment only in that State and New South Wales has any real progress been apparent comparable with modern standards during the past decade. But handling freight traffic is the particular destiny of Australian railways, yet Victorian and New South Wales Railways, in particular, are continuing to expand and multiply their fleets of four-wheel utility cars which will continue to limit the overall speed of freight train operation and damage even main line heavy trackage for as long as we are prepared to tolerate old methods to cope with modern traffic.

Victorian Railways. — Sufficient wheat-proofed gondolas of class GY having been constructed in Departmental shops, all new standard 22-ton freight cars constructed since August, 1948, have been of similar design and dimensions, but without wheat-proofing. The new series are class 10 and the numbers range upwards from 15890. For the first time in over 20 years the VR is seeking bids from outside builders for freight cars, so far without result.

(Mr. Buckland will be pleased to receive news items from any source. His address is: 118 Albert St., South Melbourne.)

ENGINE PICTURES



The only one of her class, Queensland Railways B16½, No. 82, was built for passenger work by Ipswich Shops in 1918. Now mostly used on Ipswich-Brisbane coal trains, this 2-6-2 is also unique for the Southern valve gear fitted.

The lower photo shows 6B9½-class, No. 9, one of three similar locos of the seven in use on the Queensland Railways 2-ft. gauge system in and around Innisfail. These locos. work hard during the sugar season.

Both photos by Ken Rogers of Albion, Queensland.

OUR COVER

Commencing with this issue, a different colour will be used for each month's cover throughout the year.

Railways in Australia

and

A.R.L.H.S. BULLETIN

The Magazine about Australian Trains

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Vol. 1. No. 5 — November, 1948

WHAT DO YOU THINK?

In our first four issues we have printed editorials either from our own pen or from those of our staff (who, incidentally, give their time and labour entirely without charge, and without whom we could not hope to carry on). These editorials have been developed along the idea that Australian railways, though often criticised unjustly, tend to be obsolete and inadequate, and can only hope to succeed by intense and energetic modernisation. This, we believe, must be coupled with speedy unification of gauges to achieve that state of efficiency which will enable our railways to play their part in Australia's rapidly developing economy.

As we were about to go to press, we received a strong and well-supported protest against the continued appearance of such editorials which, it was claimed, served no useful purpose, and used valuable space to the detriment of other more interesting matters. "Railways in Australia," it was urged, is a rail-fan publication, and should not indulge in "railway politics," which would either arouse the antagonism of railway administrations, or be entirely ignored by them.

In view of this protest, we have withheld an editorial on gauge standardisation which was to have appeared this month, and have increased the allocation to news items.

In defence of our editorial comment, it may be said that, if rail-fans do not press for railway modernisation, nobody else will, and, if "Railways in Australia" does not urge it, no other journal will do so.

However, this is *your* magazine, and we want to abide by *your* views. Please write and let us know what you think—a postcard will do—and we shall be governed accordingly.

Standard express passenger loco of the Commonwealth Railways is C-class 4-6-0 with twelve-wheel tender. [illegible] photo. shows No. 68 servicing at Cook (7/8/46); photo. by Mal Park.

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

THE NEW *WESTLAND* TRAINS: Designed and constructed in the Western Australian Railways Midland Junction shops, two new trains were placed in service between Perth and Kalgoorlie, W.A., on March 24 last. They provide the Western Australian contribution to the Trans-Australian service, known as the *Westland Express*.

Each train comprises three first-class sleeping cars (described in RAILWAYS IN AUSTRALIA, September issue), three second-class sleeping cars, lounge car and baggage car. Accommodation is provided for 48 first-class and 60 second-class passengers and reservations are strictly limited to sleeper capacity. Externally, the trains are painted in the Western Australian Government Railways striking new colour scheme of green and cream.

First-class cars have two-berth compartments featuring the latest interior decoration and fittings, including fluorescent lighting. Walls and floors are insulated against heat and noise, and the ceiling is lined with sound-absorbent tiles. Sliding compartment doors have replaced the old-fashioned hinged type. Intercommunication vestibules between cars are of the enclosed type to prevent entry of dust and draughts. Each car is equipped with a shower compartment with constant hot and cold water. (*The Westland* was the first Australian train equipped with this feature as part of regular equipment.)

The modern dining car seats forty diners and the lounge car is equipped with easy chairs, a writing desk, newspapers and periodicals are available for passengers' use. The second-class sleeping cars are modernised with four-berth compartments finished in polished jarrah. Cushioned seats are upholstered in brown leather, and the padded back rests swing upwards to provide the upper berths. All sleeping berths (both first and second-class) are complete with rugs and bed-linen of first grade—the only State railway in Australia making such provision. Normal incandescent lighting of indirect type is standard in the second-class cars. Cars are equipped with ground loading steps.

An attractive illustrated brochure describing and illustrating features of the new trains—and the route of *The Westland*—has been issued by the Publicity Department of the W.A.G.R.

OIL-BURNERS RUNNING ON N.S.W.G.R.: Oil-burning 55-class locomotives operating in fast freight service on the New South Wales Railways totalled 16 as of December 31, 1947. No further conversions have since been made. Locomotives were initially converted to burn diesel fuel oil (distillate), but subsequently, when crude oil (Bunker "C") became available, modifications involving a steam heating coil in the fuel tank were made and all oil-burners are now operating on the heavier fuel. Numbers and dates of conversion are as under:

Engine No.	Date Converted (Distillate)	Date Modified (Bunker "C")
5502	8/46	10/47
5581	8/46	9/47
5535	9/46	8/47
5530	9/46	7/47
5620	10/46	10/47
5506	11/46	10/47
5574	6/47	8/47
5618	6/47	9/47
5579	6/47	10/47
5611	7/47	10/47
5519	7/47	10/47
5525	7/47	11/47
5522	8/47	11/47
5541	8/47	11/47
5537	8/47	12/47
5571	9/47	12/47

Oil-burning locomotives on the N.S.W.G.R. are readily identified by the cypher "O" stencilled on the front engine headstock, opposite the number; the hinged damper attached to rear of the stack; oil tank in the tender coal space and burner controls on the fireman's (right) side of firebox. They are normally confined to working between Enfield Yard (Sydney) and Goulburn, Lithgow and Newcastle.

Unless coal supplies again drop to danger level, it is fairly improbable that any further N.S.W.R. locomotives will be equipped for oil-burning, owing to increased operating costs involved.

DYNAMIC BALANCING OF LOCO. WHEELS ON N.S.W.G.R.: To the end of July, 1948, modification to locomotive driving wheel balancing, as a result of dynamic testing in a wheel balancing machine (which rotates wheel sets at high speed and indicates faulty balancing) had been made to a total of 136 steam locomotives on the New South Wales Railways. All class 35 and 36, 4-6-0's were first rebalanced with excellent results. Experiments were then conducted with 53-class engines and 24 have now been modified and permitted to operate at higher speeds. In this case the results were sufficiently encouraging to lead to further experiments with Engine 5605, which, in September, 1947, was tested on a Western passenger train and attained a speed of 53 m.p.h., which is considerably in excess of normal maximum speed permitted these low-wheeled (51-in. drivers) machines. Further engines of both classes will be rebalanced as opportunity offers, and to date two 55-class engines have been modified. Rebalanced engines of Classes 53 and 55 are identified by the stencilled letter "X" on the front engine headstock, opposite the number, as well as by additional counterweights on the driving wheels.

TRAIN SERVICE RESTORATIONS IN SEPTEMBER: Passenger train service cuts imposed during the past winter were largely restored to the position obtaining during last summer, particularly in New South Wales and Victoria. N.S.W.R. "Daylight" express trains have reverted to six days a week (in place of three) and Mail trains have resumed running on four nights a week (in place of three). The North-West Mail has been restored to six days a week operation and the second division of the Brisbane Express (via North Coast) with a fast connection to Murwillumbah, has been restored in each direction seven days a week. Other restorations include many local and tourist trains operating between Sydney and South Coast, Southern Highlands, Blue Mountains and Gosford-Newcastle districts at week-ends, and Saturday night "paper trains" to Orange-Forbes and Dubbo, with balancing return trips on Sunday nights from those lines.

From September 27, the Victorian

Railways resumed a service approximately equivalent to 75 per cent. of pre-war 1939 frequency on all main and branch lines. Morning down and afternoon up passenger trains run daily on all main lines and evening down and afternoon up trains two and three days a week. Accelerations approximating 75 minutes in each direction between Melbourne and Serviceton and 60 minutes in each direction between Melbourne and Mildura coincide with the issue of a new printed Working-timetable for the Western and South Western lines—the first since 1940. The Mildura "express" now operates five days a week in each direction, and departs from Melbourne 15 minutes later—at 7.55 p.m., with earlier arrival at Mildura. In the southbound direction earlier arrival at Melbourne—at 7.20 a.m.—is provided for. These are the first accelerations introduced by the Victorian Railways since the ill-fated 1938-39 tables immediately

Impressively modern in appearance is No. 524 of the South Australian Railways. This huge ~~4-8-8~~ is one of the 520 class. Our cover photo this month is the work of Mr. C. L. Busch, of Moonee Ponds, Vic.

4-8-4 525

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before the war.

GRADE CONTROL VALVES AID N.S.W.G.R. FREIGHT OPERATION: All new freight rolling stock, excepting louvre cars and refrigerator cars, built by, or for, the New South Wales Railways for several years past, have been equipped with a modification of the standard Westinghouse air brake equipment known as a Grade Control Valve ("retainer"), and existing freight cars of the principal types used exclusively in freight train operations have been similarly equipped as they passed through the workshops. Grade Control Valves are used to enable heavier loads to be safely handled on long falling grades, such as are frequently met with on all main lines in New South Wales.

Vehicles so equipped are identified by a 12-inch diameter white circle stencilled on the body and bearing figures denoting the month and year the equipment was last examined at a workshops. The valve itself can be operated by a handle from either side of the train, and under normal conditions vehicles so fitted are run with the operating handle in the normal release (EX) position, i.e. with the handle vertically down. There are three other operating positions; two known as (IP) intermediate pressure, in which the handle is turned to either horizontal position, thus retarding exhaust of air from brake cylinders during recharge of auxiliary reservoirs, and (HP) high pressure, with the handle vertically upwards, in which maximum retardation of air release enables speed to be safely controlled between brake applications even on the steepest grades, by retaining 7 lb. brake cylinder minimum pressure continuously after initial application.

Limited operation of trains under Grade Control Valve working was instituted following successful tests on Western coal trains during 1945, but general operation is dependent upon the majority of freight cars being equipped with the valves, which is not yet the case, although grade control valve operation is at present authorised on two sections; the Moss Vale-Unanderra line, between Summit Tank and Unanderra, and the Western line, between Katoomba and Springwood, or Valley Heights, according to train load.

Of the 17,355 freight cars at present authorised for equipment with Grade Control Valves, a total of 9,012 had been equipped to the end of July, 1948, with new equipments being fitted at a rate approximating 300 per month. The classes and total numbers of vehicles fitted with Grade Control Valves as of July 31, 1948, were as follows:—

Class	Description	No. Fitted	No. in Class
U	24-ton gondola — 4-wheel	2,510	3,746
K and KH	24-ton gondola — 4-wheel	556	807
BE, LBE and BBE	Bogie flat cars	221	599
B	20-ton coal cars — 4-wheel	83	100
CH, LCH and FCH	16-ton coal hopper cars — 4-wheel	1,606	1,606
S and WS	15-ton gondolas — 4-wheel	4,036	10,497
	TOTALS	9,012	17,355

Special instructions cover the operation and air-brake testing of trains operating under Grade Control Valve working, which, whilst not eliminating stopping trains at summit and foot of grades to operate the grade control valves, enables heavier train loads to be safely operated than under ordinary air-brake operation with supplementary hand-brake control on steep grades. For instance, it is now possible to regularly work 1,500-ton coal trains through from Lithgow Yard to Enfield by a 57-class locomotive (assisted through between Lithgow and Mount Victoria) against the previous tonnage maximum of under 1,000 for the through journey, assisted to Zig Zag, for the same class of engine. Operating economies will result as progressively more freight cars are equipped with Grade Control Valves, resulting in better use of rolling stock and increased track capacity.

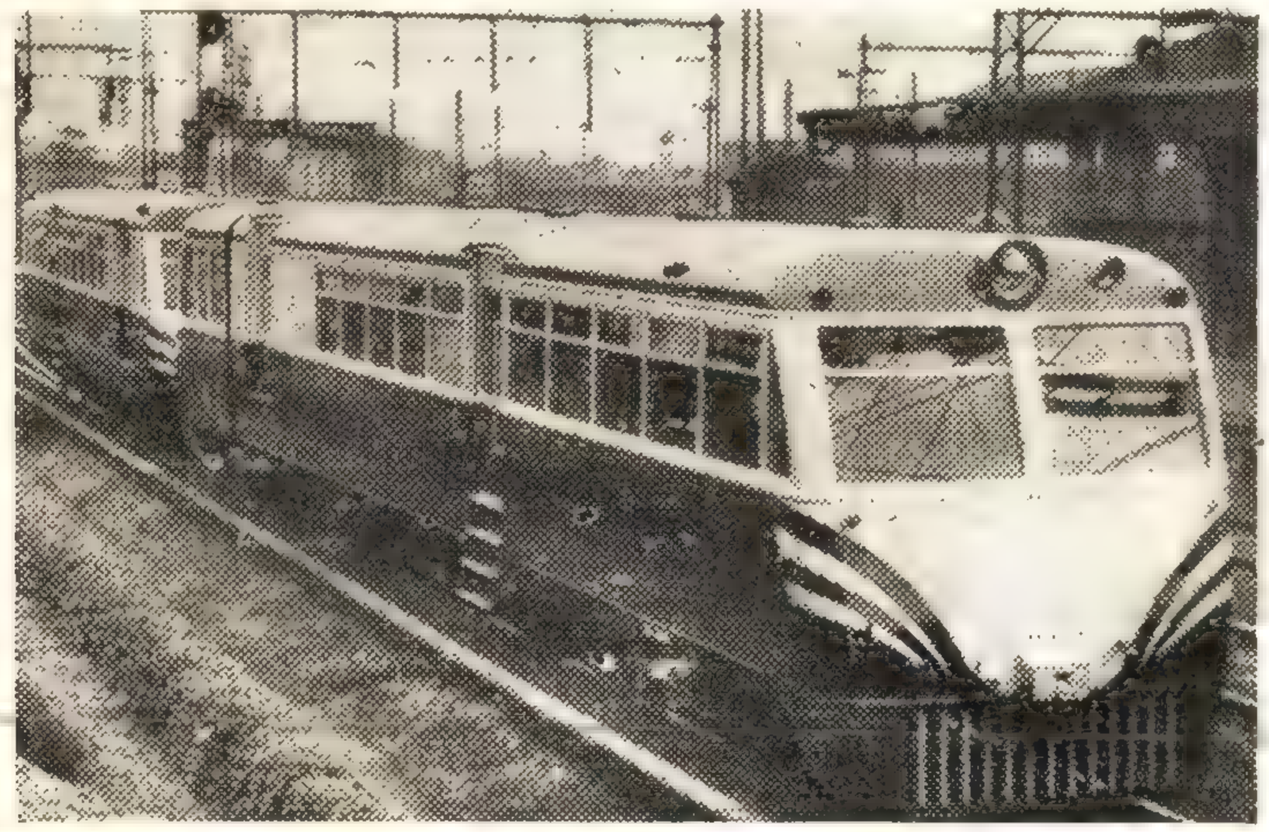
QUEENSLAND RAILWAY NOTES: From Mr. Ken Rogers, of Brisbane, comes the following information. Two new C-17 class 4-8-0 general purpose locomotives, Nos. 955 and 956, were delivered from Walkers Limited, Maryborough, in September, 1948. In the previous month, Engine 824, which figured in the Camp Mountain accident last year, was returned to service.

A start is to be made during the current financial year on the work of duplicating the South Coast line from Yeerongpilly to Kuraby, where a new concrete station building will be erected.

A decision on the recommendation of the recent commission of enquiry into the electrification of the Brisbane suburban railways is expected to be announced soon by the Queensland Government, which is now considering the scheme.

RACEHORSES TO RIDE FAST FREIGHTS: Because of the continued inability of the Victorian Railways to handle horseboxes on passenger trains, because of overloading and coal restrictions, arrangements were made to send interstate horses from Adelaide and Sydney to the Melbourne Spring Racing Carnival by fast freight trains. Special trains for horse traffic and horseboxes on passenger trains have been banned by the Victorian Railways since 1940, although such traffic is still handled with minor limitations on other systems.

BIG MONEY FOR RAILWAYMEN: Because of staff shortage on the Central Australian Railway, some locomotive enginemen and traffic employees of the Commonwealth Railways working between Telford and Quorn, S.A., are earning up to £50 a fortnight, with overtime. With the fortnightly pay cheque for railway workers based on Quorn averaging £6,000, civic leaders are protesting strongly against the Commonwealth Railways' reported intention of con-



New V.R. diesel railcar and trailer (see comment elsewhere in this section). Block kindly lent by Melbourne "Argus."

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THE WAITING ROOM—

Tails of the Rails

Contributions under this heading are invited from our readers. Tales may be humorous or otherwise, and should describe some incident or incidents on an Australian railway. Events overseas, however interesting, are not desired at present. Write clearly, of course, and on one side of the paper.

DOWN FROM SOMERSET

By E.S.

If, as a result of a little bit of miscalculation, the signalman at a staff and ticket station finds that he has both staffs and no train at his station, he is really in a bit of a spot, because no train can approach either way until he has one of the staffs transferred, or someone issues a Line Clear Report.

It was not the sort of embarrassing position in which I expected to see anyone, but such a situation nearly arose at Somerset, on the Launceston-Stanley line, in Tasmania, when I was there last year.

This particular morning I had left Trowutta at 3.30, sleeping in the guard's van as far as Wiltshire Junction, where I had to change, in the pouring rain, into another Goods across the island platform. T234 was going well, and arrived at and left Wynyard about a quarter of an hour early, after waiting a trifle for ASG37 on a goods from the east.

Somerset's home signal was off, and 234 sauntered up the 1 in 412 into the station. There was no train in the crossing-loop-cum-siding, and so I was amazed when the driver swung down the battered blue staff he'd brought from Wynyard and, after being shown the red staff for the Burnie section, was given a red ticket. And there was the SWP on the platform **with both staffs under his arm,** and, when my train had gone, no other train to take one away.

I followed the guard into the office to tell him that the SWP had made a "blue", but got no further as I could hear the SWP and Control discussing things a little heatedly. One end of the argument sounded like this:

"But I've got both staffs here and 22's going on ticket . . ."; "No, the light engine hasn't left Burnie yet . . ."; "Twenty-two will be half-an-hour at the Freezers . . ."; "O.K., I'll give 22 the staff." He hung up with a smile and, after taking the ticket from the driver, gave him the staff.

We were half-an-hour at the Freezers —mostly waiting loading—and so we swung into Burnie at 11.44 where the light engine had then been simmering for the best part of an hour, and the driver and fireman were almost asleep in the warm sunshine.

Question Box

Questions on any aspect of railway operations, past or present, in Australia, may be sent to this journal. Mark the envelope distinctly "Question Box." If we don't know the answer, we'll endeavour to find out, and, if all else fails, we'll print your question and leave it to our readers. (It is regretted that direct answers cannot be posted to correspondents).

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

This month's Favourite Photo, the work of John Grimwade, Melbourne, is a striking picture of South Australian Railways 700-class locomotive, No. 704. This powerful 2-8-4 type, like most heavy S.A.R. locos, bears a strong resemblance to American designs.

We quote a well-known writer:

"The up distant was so high it needed two men to light it."

—E.S.

2-8-2

(Continued from Page 4)

structing a line west of the Flinders Ranges on a more favourable grade for the haulage of coal direct from the Leigh Creek coalfield to the new regional power station at Port Augusta, to be constructed by the South Australian Electricity Authority.

SURPLUS "TERRITORY" LOCOS SHIPPED TO TASMANIA: As announced in September issue of RAILWAYS IN AUSTRALIA, the Tasmanian Transport Department has bought the remaining surplus NFB-class locomotives from the Commonwealth's North Australian Railway, at an inclusive price of £12,000 delivered at Hobart wharf, for seven engines and six tenders. They are as follows:—NFB's 43, 94 and 96 (in fair condition) selected by the Chief Mechanical Engineer, Tasmanian Railways; NFB's 44, 46 and 48 (in fair condition) as recommended by the Commonwealth Department of Transport, and NFB 91, without tender, to be utilised for spare boiler and spare parts for the other six.

These locomotives were shipped from the Naval concrete boom jetty at Darwin in September, in a dismantled state, per s.s. "Barrigun," and delivery to Hobart wharf is stipulated to be completed by November 15. Alterations required comprise the coning of tyres, altering the buffing and drawgear and fitting of Vacuum in place of the Westinghouse air brake. The Tasmanian branch of the A.F.U.L.E. has agreed to operate these engines with the present left-hand driver's position. Brief specifications are:—Type, 2-6-0; cylinders, 14½-in. x 20-in.; 39-in. coupled wheels and 185 lb. boiler pressure, developing 16,950 lb. tractive effort. Total heating surface is 806.2 sq. ft., and weight

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roadworthy of engine and tender is 49 tons 19 cwt. The six-wheeled tender capacity is 1,600 gallons of water and 4½ tons of coal.

These former South Australian Yx-class engines are equivalent to the reboilered 2-6-0's of the CC-class of the Tasmanian Government Railways. We are indebted to Mr. O. G. Meyer, Commonwealth Department of Transport, for this information.

DIESEL RAILCAR FOR DAYLESFORD SERVICE: On September 21, the Victorian Railways first 153 b.h.p. Walker diesel rail car (RM20) and trailer car No. 50 were tested empty between Melbourne and Woodend. Blocks of iron equivalent to a full passenger load were distributed through both vehicles. The motor car had previously been running between Melbourne and Heathcote for some weeks, but no trailer car had been available. A second test was run on September 22, carrying members of the Holiday Train Association on a day's outing, and on September 30 (Show Day holiday in Melbourne), the trip was repeated for the

(Continued on Page 19)

OMISSION

We omitted to mention at the time that the large map showing Australian rail gauges, which adorned the cover of our September issue, was specially drawn for "Railways in Australia" by Mr. C. C. Singleton. Plans and maps by Mr. Singleton have appeared in every issue of the A.R.L.H.S. Bulletin and Australian rail fans owe him a very great debt for his work in this sphere. Just how "Sing" manages, we can't imagine, for, in addition to his onerous professional duties, he finds time to write prolifically and to take an active part in amateur light opera work and other

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park. Addresses will be found on page one.

Queensland Railways:
In October issue, Page 4, reference was made to C-17 class locomotives having been first introduced in 1924; this should have read in 1920.

Victorian Railways:
In October issue, on Page 20, owing to a typographical error, new non-wheat-proofed 22-ton gondola cars were described as forming a new class 10. This should have read "Io". To prevent similar errors arising in Departmental correspondence and telegrams, etc., these cars have now been reclassified HY, and at least 20 already in running were altered during September-October.

(J.L.B.)

Rolling Stock Parade:
In our August issue we erroneously referred to the wooden buffet car as No. 55. This car has, of course, no number, in common with other special types on the V.R. The figures visible referred to the tonnage rating.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

The VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at the Model Dockyard, 216 Swanston Street, MELBOURNE; visitors welcome.

OUR RETAILERS

"Railways in Australia" can be obtained from a number of retailers and arrangements are being made for nation-wide distribution. Place a standing order now, or, if this is not yet possible, send a subscription direct to the publishers, TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5, Victoria.

THESE SHOPS STOCK OUR MAGAZINES

MELBOURNE:
Collins Book Depot.
Hearns' Hobbies.
Herbert Small Pty. Ltd.
McGill's Newsagency.
Meadmore Model Eng. Co.
Model Dockyard.
Technical Books Pty. Ltd.

SYDNEY:
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Price's Radio.

NEWCASTLE:
New Standard Radio.

BRISBANE:
Massey's, Sports Store

TOOWOOMBA:
Aircraft Hobby Shop.

Readers' Wants

This service is available to bona-fide readers of "Railways in Australia," who may advertise their wish to buy, sell, or exchange railway literature, models, etc., or to obtain pen friends. A nominal charge is made of 1/- for five lines.

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post in due course; please enclose a stamped, addressed envelope.

G. Bakewell, Kew, Vic. Thanks for pix; will use early next year—may run a special issue for the event.

J.L.B., Melbourne, Vic. Thanks for very clear prints. Will use both.

J. Grimwade, Melbourne, Vic. One print used in this issue; have another in mind for future cover photo. Just what we want, thanks.

E. Lindsay, Toowong, Qld. Several rather indistinct small prints must be sharp to stand enlargement. D17s will be used.

A. A. Rowe, Balwyn, Vic. Thanks for your contributions—both being used; print will be returned.

E.S., Vic. Your contributions are most welcome, and we shall always be glad of similar items.

LETTERS TO THE EDITOR

The Editor will be glad to receive for publication letters from readers on any aspect of Australian railways—past or present. Contentious matters likely to cause ill-feeling should, of course, be avoided, as also should attacks on railway administrations—these are best made in the press.

general public and was fully booked. Effective October 18, this unit has been operating two return trips between Melbourne and Daylesford daily, except Sundays, running express between Melbourne and Woodend.

COAL CONSUMPTION TESTS BY V.R.: In order to have the most up-to-date figures on locomotive coal consumption for comparison with anticipated early shipments of coal from Britain, India and perhaps South Africa, the Victorian Railways carried out a series of dynamometer car test runs during September with X-class booster-fitted 2-8-2 freight locomotive No. 44 between Melbourne and Bendigo. With a through ruling grade load of 555 tons on a fast schedule, tests were conducted under varying conditions in each direction over several weeks with State Mine (Wonthaggi) and N.S.W. Western (Lithgow) and other coals.

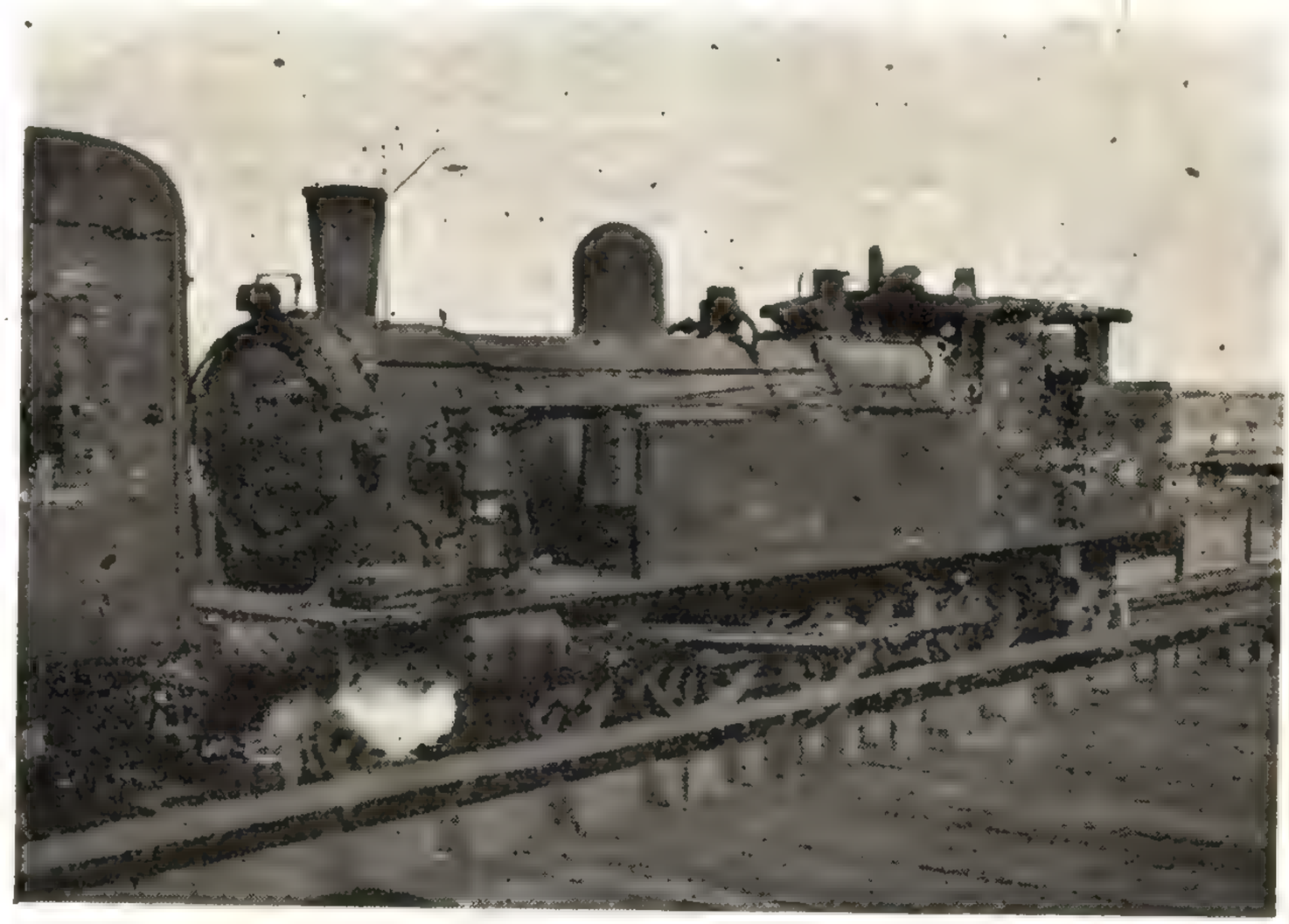
TWENTY-ONE ALUMINIUM-BODIED LOUVRE CARS have been built at Chullora Shops of the New South Wales Railways in the former Aircraft Annexe, of a total order for 25. There is a saving of approximately two tons weight in each body as compared with the standard wooden-bodied MLV louvre cars. Further savings may be made by designing a special light-weight underframe, but present material costs are such that all-metal louvre cars will have to show substantial savings in maintenance before being generally adopted by the N.S.W.G.R.

Oil-Burners in the West: Engine 529, "Fitzroy," one of the PR-class Pacifics, has been converted to an oil-burner.

Motor Body Transportation (See "Railways in Australia," September issue) by rail between Adelaide and Melbourne is being aided by the special equipment of 45 OM type 40-ton gondolas by the South Australian Railways, writes Mr. Brian J. Castle, of Seacliff, S.A. Backloading of automotive accessories and raw materials is aiding economic use of these cars which are given priority handling on interstate fast freights between Melbourne and Adelaide.

All Interstate Fast Freight to and from Sydney is now handled exclusively at Alexandria (Sydney) freight station to relieve congestion at Darling Harbour, particularly during the present reconstruction of the freight handling facilities at that location. Local freight formerly handled at Alexandria is now transferred to the new Cooks River Yard, near Sydenham, served by a connection from the Botany freight line.

VETERAN RAIL MOTORS RETIRED: During July, the Victorian Railways withdrew from service the first two AEC rail motors Nos. 7 and 16 which have been replaced by Walker diesel cars of more modern type. No. 7 had run the impressive total of 316,000 miles, and No. 16 no less than 402,000 miles, since their service began over 25 years ago.



Outside-hung doors are responsible for the odd appearance of these modern, all-steel suburban cars, several sets of which have been placed in service during recent years on the South Australian Railways. Painted internally in attractive pastel shades, the cars are lit by fluorescent tubes. External color scheme is dull red. The upper photo. shows a train leaving Commercial Road Station, Port Adelaide. The loco, an interesting 4-6-2T, class F, is shown in the lower picture; note the flared stack. Both photos. by Mal Park (7/46).

Defence Department Sidings at Murgheboluc, Victoria (on the Gheringhap-Maroona cross-country freight line) were removed on September 1.

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Electronic Rail Flaw Detector.—At the inquest at Harden, N.S.W., on the four passengers who lost their lives in the Rocky Ponds derailment of the South West Mail on June 30, 1948, the Chief Civil Engineer of the N.S.W. Railways (General Fewtrell), revealed that an electronic rail flaw detector had been developed by the N.S.W.R., and was in use on main lines with satisfactory results. It is indeed unfortunate that the device had already tested the Up main line in the vicinity of the accident, but the Down line had not then been completed. The equipment is mounted on a motorised section trolley.

Two sets of electronic flaw detectors have been ordered from Britain for the Victorian Railways. Initially they will be used for testing axles at Newport Shops, but the equipment has other specific uses, and is mobile.

Carrier Telephones and Teleprinters are being installed by the Victorian Railways between Melbourne - Seymour - Benalla - Albury, where connection will be made by through N.S.W.R. circuits to Sydney and Newcastle. Teleprinters will be used for waybilling and passenger reservations. V.R. installed an experimental teleprinter circuit between the Telegraph Office, Spencer Street, and Melbourne Freight Station in January, 1948. This installation has functioned so successfully that further additional circuits may be installed on other main lines.

PERSONAL

After completing 48 years' service, Mr. A. G. Denniss retired from the postiion of Chief Traffic Manager of the New South Wales Railways on September 30. He began as a probationary porter at Byrock in September, 1900, and had been Chief Traffic Manager since December, 1932. His successor is Mr. D. J. Howse, formerly General Passenger and Freight Agent, who joined the Department in 1913. During the war, Mr. Howse was Director of Railway Transportation for the Australian Military Forces. Recently he has been on loan to the Tasmanian Transport Commission's Railway Branch.

Another N.S.W.R. identity to retire on September 30 was Mr. W. F. Barton, A.M.I.E., Chief Signal and Telegraph Engineer since 1929. He is aged 73 and began his railway career as an electrical engineering cadet on the South Australian Railways in 1890. He joined the N.S.W.R. in 1895. His successor is Mr. P. J. Fahey, formerly Assistant Chief Signal and Telegraph Engineer.

Mr. P. J. Hannaberry, at present Chief Civil Engineer of the Commonwealth Railways, has been chosen to succeed Mr. G. A. Gahan, O.B.E., as Commissioner, upon the latter's retirement on November 7, 1948. Mr. Gahan has been Commonwealth Railways Commissioner since 1929. Mr. Hannaberry began his railway career with the Victorian Railways.

Mr. A. C. Ahlston, Chief Mechanical Engineer, Victorian Railways, will be accompanied by Mr. S. F. Keane (an assistant engineer) on a three months' air trip to Britain shortly to arrange deliveries of the seventy N-class locomotives on order from the North British Locomotive Co., Glasgow. They will also investigate the suitability of British diesel-electric road locomotives for the Victorian Railways and current developments in British railway mechanical engineering. They may also visit the Continent, including Germany, in view of the forthcoming tests of Victorian locomotives fitted with German pulverised fuel equipment designed for burning brown coal.

Mr. F. Mills, Chief Mechanical Engineer, Western Australian Government Railways, is also visiting Britain in connection with locomotives on order for the W.A.G.R. from British locomotive builders.

OVERSEAS ITEMS

AMERICA FAVOURS DIESELS

Evidence of the trend towards the use of diesel-electric in place of steam locomotives on the American railways is to hand in a statement issued by the American Locomotive Company, says "Modern Transport." Originally specialising in steam locomotives, Alco later pioneered, in partnership with the General Electric Company, the diesel-electric locomotive. In 1947 it switched from 75 per cent. steam loco. production and 25 per cent. diesel, to 85 per cent. diesel and 15 per cent. steam; this year the proportions will be 92 per cent. diesel and 8 per cent. steam — most of the latter will be orders from foreign countries. Last year, the Schenectady works built 634 diesel and only 37 steam locomotives. The potential market for main-line diesels is deemed to comprise the replacement within ten years of America's 35,000 steam locomotives with some 20,000 diesels. Mr. Robert B. McColl, president of the company, told the Railroad Executives' Conference: "The locomotive of the forseeable future is the diesel-electric. To be realistic, there has been a span of 24 years from the time the American Locomotive Company and the General Electric Company built the first successful diesel-electric locomotive until the first major railroad becomes completely dieselised this year." As "Modern Transport" observes, undoubtedly there is a trend towards diesel-electric operation in the U.S.A.

STARRING—THE RAILWAYS

A new note was struck in railway Public Relations recently, when the Southern Region of the British Railways invited the public along to witness track relaying work at Waterloo station (London). The work was done, using the latest prefabricated track methods, between 11.30 a.m. and 2.30 p.m. one Monday and the crowd numbered several hundreds. (Other railways please copy!—Ed.).

PLUM AND SPILT MILK

The experimental colour schemes for British Railways have not had an entirely favourable reception. Among many letters appearing in transport journals and the daily press is one from a gentleman who that the cream and chocolate looked "dull, drab, and dingy" and the plum and spilt milk "mean and thin; in fact, the spilt milk appeared to be more like skimmed milk well watered!"

DIESEL-ELECTRIC TESTS.

After completing 51,300 miles in traffic between St. Pancras (London) and Derby, the main-line diesel-electric locomotive No. 10,000 has returned to Derby works for inspection. The second locomotive, No. 10,001 is now in operation on the same route. When No. 10,000 returns to traffic, the two locomotives will be coupled and tested on west coast Scottish expresses.

MORE TRAINS IN EIRE

Sunday trains have been restored on main-line services in Eire. Sunday running had been discontinued for some considerable time, owing to fuel shortages.

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Railways in Australia

and

A.R.L.H.S. BULLETIN

The Magazine about Australian Trains

Published monthly by TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5, Victoria, in conjunction with the Australasian Railway and Locomotive Historical Society.
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10 Dunstaffenage Street, Hurlstone Park, N.S.W.

Vol. 1, No. 6 December, 1948

Pre-war Newcastle Express of the New South Wales Railways on the Cowan Bank, hauled by 36-class loco. No. 3666. The clerestory-roofed cars, although old, had been thoroughly modernised internally for this service and looked most attractive in a bright red and cream livery. Modern, air-conditioned stock is now used. (Block kindly lent by N.S.W.R.)

SPEAKING FRANKLY—

We are not particularly proud either of the appearance of this magazine or of the numerous errors which creep into captions and elsewhere. A magazine succeeds only if it is well-produced, and we do not believe that we have reached a satisfactory level in this respect, despite the kind remarks of our many friends and well-wishers.

We do feel, however, that our equally numerous critics fail to appreciate either the problems of producing a monthly publication, or the limitations imposed upon us. Comparisons with "other journals" suggest that readers are not aware that we do not have an office, a paid staff, or any of the other facilities of a commercial publishing firm. Messrs. Park and Buckland, who provide most of the material and much of the editing, do so entirely in an honorary capacity; so, too, does Mr. Singleton, whose maps and plans are such a popular feature. The Managing Editor, who has other publications on his mind, carries out essential business during his lunch hours and after his normal day's work, and tackles editorial problems, correspondence, and accounts far into the night. We do not ask for sympathy—it is a labour of love—but we do ask for understanding.

It may be argued that all this is no concern of the reader, who is interested only in the finished product. This is true, but, without the activities described above, there would be no product. It just is not economically possible to run a rail-fan magazine in Australia on a commercial basis. An esteemed friend lost a considerable sum and earned precious little thanks in a gallant effort to do so; he warned us against running the same risk, but, believing that there is a place for such a journal, we are doing what we can on a spare time basis. In return, we ask you to be patient a little while longer—the result will be worth it.

WHAT DO YOU THINK?

Last month we asked for readers' views on the editorials which appeared in earlier issues of this journal. Strong objection has been voiced in some quarters to their continuation, and we wished to hear what readers had to say before reaching a decision in the matter. This month, instead of an editorial, we publish some of the letters received. Comment, both written and verbal, has been fairly evenly divided, but, almost without exception, has been from Victorian readers. Before reaching any definite conclusions, we should like to have some expression of opinion from other States.

The Editor,
"Railways in Australia."

Dear Sir,—I am in agreement with your reader and feel that no good purpose can be gained by telling railway officials that their equipment is obsolete. They know only too well that this unfortunate position exists. The annual reports of the major railway systems in Australia during the last thirty years have continually stressed the shortage and condition of locomotives, rolling stock, tracks, signal equipment, etc. But when a railway administration has to go begging on its hands and knees to politicians to obtain funds to purchase a locomotive, editorials of the type that have been appearing recently can have little effect in railway offices. Letters to parliamentarians would be more logical.

However, as "Railways in Australia" is an enthusiasts' magazine, its purpose should be for improving the enthusiast rather than the railwayman. Although many enthusiasts have an appreciable knowledge of railway practice, there is a vast amount of information unknown to us. Technical articles by railwaymen themselves, loco. designers, traffic men, civil engineers, would provide a wealth of information, thus giving incentive to enthusiasts to make a closer and more detailed study of railways.

More intense and intelligent interest, particularly in the technical vein, will do much towards raising the standard of railway knowledge amongst enthusiasts generally, thereby convincing the railwayman that the enthusiast is not trying to teach him his job, but to learn it. Consequently, a greater understanding between officers and enthusiasts will be achieved. The benefits received by enthusiasts following such an understanding will be immeasurable.—Yours, etc.,

JAMES Y. HARVEY, Croydon, Vic.

(Mr. Harvey's letter is the most constructive contribution we have yet received in this sphere. We shall be very happy to publish technical articles, complete with diagrams, and cordially invite their contribution. One point overlooked by Mr. Harvey, is that our leader-writer objected to the continued construction of what he regarded as obsolete types of rolling stock; this cannot be justified on the grounds of lack of funds, and it is possible that, in matters such as this, an onlooker may see more clearly than an expert immersed in the all too difficult task of running Australia's railways.—Ed.)

The Editor,
"Railways in Australia."

Dear Sir,—While agreeing with your correspondent's contention that space used for editorials might be used to better advantage, I feel that every worthwhile publication should have a definite policy which it should express quite freely. What you have said so far is not likely to offend railway authorities, and may possibly indirectly stir our politicians.—Yours, etc.,

JACK B. STRANGER, Melbourne, Vic.

The Editor,
"Railways in Australia."

Dear Sir,—You have asked for readers' opinions on your editorials. So far I have nothing to complain of, but my general feeling is to avoid "railway politics," and if standardisation of gauges is railway politics, then avoid it. Should standardisation ever be implemented, all railwayists will be intensely interested, and there will be plenty of scope for the subject in your magazine.

I should say that you are catering for the amateur railwayman primarily, and should deal with railways as they are, or for the historically minded, as they have been. Try to make "Railways in Australia" for us what the "Railway Magazine" is for England. For instance, the latter journal could have "played up" the pros and cons of nationalisation of railways in England during the last couple of years, but it wisely did not. When it came about, a full explanation of the change was given. That was all.

I hope my remarks are of some assistance, because I think you have made an excellent start with "Railways in Australia."—Yours faithfully,

GUY BAKEWELL, Kew, Vic.

The Editor,
"Railways in Australia."

Dear Sir,—I regret that I am unable to agree with the policy of your editorials. I advocate their withdrawal for the following reasons:—

1. The publication of such critical

(Continued on page 20)

WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

RAILWAY MODERNISATION

Queensland Plans Big Expenditure

A programme of rehabilitation and development of the Queensland Railways, involving expenditure of between £15 million and £16 million over a period of seven years, has been recommended to the Queensland Government by the Commissioner for Railways (Mr. W. Maloney) in his annual report, just presented to Parliament.

Queensland, with almost 6500 route miles, has the largest single railway system in the Commonwealth, serving what is potentially the richest area of Australia in natural resources. With its vast proved reserves of coal, its substantial mineral deposits — gold, silver, copper, lead and precious stones — its rich pastoral and sugar industries; its large agricultural, dairying, fruit-growing and timber industries, dependent upon the provision of adequate, fast and efficient railway transport, immediate and substantial improvements and replacements of obsolete locomotives and rolling stock are vitally necessary.

During World War II, the Queensland Railways — ill-equipped and of limited capacity — performed prodigious feats of transportation for the Allied Forces, at a cost amounting to the pressing necessity to virtually reconstruct and re-equip the entire system.

In order of priority, the works programme includes the following items:—

DUPLICATIONS: — Rocklea-Kuraby and Yeerongpilly-Rocklea (South Coast Line); Newmarket-Mitchelton (Dayboro' Branch); Eagle Junction-Whinstanes (Pinkenba Branch); Theebine-Gympie (North Coast Line) and Grandchester-Yarongmulu (Southern and Western Line).

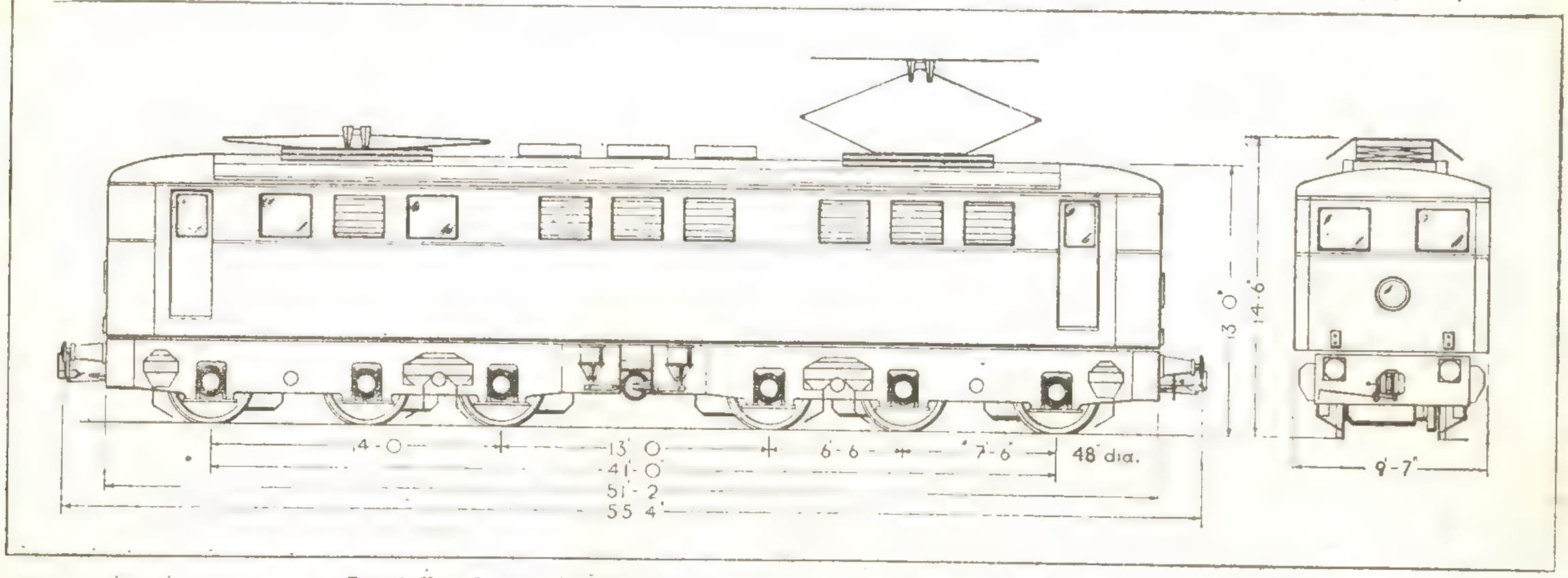
QUADRUPLICATIONS:—Mayne-Northgate (North Coast Suburban); Corinda-Roma Street (S. and W. Suburban); Roma Street-Mayne, via Normanby (Exhibition Loop), and Roma Street-Mayne (via Central).

AUTOMATIC SIGNALLING:—Northgate-Caboolture (North Coast Line); Northgate-Sandgate (Sandgate Branch); Corinda-Ipswich (Southern and Western Line); Park Road-Dutton Park (South Suburban); Park Road-Manly (Cleveland Branch), with provision of a central power interlocking for the Park Road-Dutton Park Junctions; central power interlocking to replace Roma Street "A" and "B" mechanical interlockings.

As part of a long-range plan to strengthen the North Coast Line, prevent flood damage and delays occasioned by floods, eight high-level bridges are to be built to replace existing bridges. (A high-level bridge over the Burdekin River is already under construction.) In addition, track strengthening involving re-railing, additional sleepers and ballast and renewal of culverts, etc., will be undertaken between Brisbane and Rockhampton, Brisbane and Ipswich, and between Emerald and Hughenden (via Winton). The South Coast Line is also to be strengthened to present main line standard and some of the worst curves will be eased. Regrading of the North Coast Line between Avondale and Mt. Larcomb is to be undertaken.

New workshops are to be built at Redbank and extensions and improvements made to those at South

(Continued on page 18)



Specially drawn for our contemporary "Tram Tracks" by A.E.C., this plan shows approximately the appearance and dimensions of the electric locomotive to be built for the New South Wales Railways. Minor alterations may be made, but all major details are correct.

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THE DEEPDENE DASHER

By Alan A. Rowe (Copyright)

I'll tell you the tale of the Dasher—
A remarkable train, so they say;
And it puffed to and from, with its driver, Ole Tom,
'Tween Deepdene and Ashburton each day.

It were quite a congenial service,
And supposing you ran a bit late;
Well, so long as you let out a whistle or waved
The Dasher would pull up and wait.

Or, again, if a bit absent-minded,
And your lunch on the platform you'd leave it;
The Dasher would grind back a couple of yards
And let you hop out and retrieve it.

Well, one day at Deepdene the driver, Ole Tom,
After dockin' his train in the yard;
Were talkin' of races as railway blokes do
While having 'is lunch with the guard.

'E'd just picked a cert. for the Derby,
When 'is eyes from 'is 'eadpiece near popped;
For on takin' a peep at 'is timepiece 'e found
That 'is jolly old ticker 'ad stopped.

Well, the guard, who were quite a good scholar,
Says "Seven from fifteen leaves eight;
Letting 'X' equal unknown quantity like,
We're just about ten minutes late."

Ole Tom makes a dive for the Dasher
And opens the throttle up wide,
Determined to make up the time as they'd lost
And give folks a proper fast ride.

That trip it will long be remembered,
'Twere a record as likely as not;
Why, they averaged near ten miles per 'our 'arf way,
And touched 25 in one spot.

Well, the Dasher were doing a steady fifteen,
With many a jerk and a jolt;
When at Riversdale out comes a porter ya see
And signalled the Dasher to halt.

Well, Tom pulls up the Dasher in clouds of hot steam,
And says: "We're on time (I'll remind you),"
And the porter says: "Yes, but unfortunately
Ya've nowt but a tender behind you."

Well, at first poor ole Tom thought the porter
Was trying some mullock to poke,
But on looking around 'e very soon found
The reason why porter thus spoke.

For in 'is great hurry to leave from Deepdene,
And make up lost time on the track,
'E'd left the best part of the train there ya see
And 'e had to go all the way back.

Well, after ole Tom had got back to Deepdene,
'E were sort of upset, so to speak;
In fact, so much so that I have heard it said
'E were late for the rest of the week.

But laugh as we will at the Dasher,
There's one thing as we can't gainsay;
It were loved and respected by all, which is something
We can't say of Railways to-day.

And there's many a bloke in the morning,
After missing his regular train,
Gives a sigh for the days of the Dasher
When the Railways was 'umble but sane.

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

Many of our Victorian readers will remember the "Deepdene Dasher," that highly fascinating but chronically unprofitable little train which once ran over a stretch of the ill-fated Outer Circle Railway of Melbourne. Reader Alan Rowe, of Balwyn, Vic., who wrote the accompanying verses, snapped the "Dasher" on 15/8/26, the last day of operation. The section of the line from Camberwell to Ashburton was electrified and is now being duplicated (and thereby losing its character!); that to Deepdene is operated by buses; other sections have long since been abandoned.

THE WAITING ROOM—

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post in due course; please enclose a stamped, addressed envelope.

Mr. J. Simpson, of Asquith, N.S.W., suggests that with the impending construction of modern, diesel-hauled power for the Commonwealth Railways Transcontinental route, it would be opportune to introduce diesel-electric power on the interstate expresses between Sydney and Melbourne. Mr. Simpson is also anxious to see the railheads at Nowra, N.S.W., and Orbost, Vic., linked to provide an alternative route between the two capitals.

Guy Bakewell, Kew, Vic.: Certainly will use Geelong article, and pix, but will have to keep in storage for a while. Thanks for such very practical help.

Readers' Wants

This service is available to bona-fide readers of "Railways in Australia," who may advertise their wish to buy, sell, or exchange railway literature, models, etc., or to obtain pen friends. A nominal charge is made of 1/- for five lines.

Question Box

Questions on any aspect of railway operations, past or present, in Australia, may be sent to this journal. Mark the envelope distinctly "Question Box." If we don't know the answer, we'll endeavour to find out, and, if all else fails, we'll print your question and leave it to our readers. (It is regretted that direct answers cannot be posted to correspondents).

Mr. George Harris, Maidstone, Vic., asks:

Could any of your readers tell me whether the "Line Clear Report" mentioned in the Rules for Working Single Lines of Railway by Train Staff and Ticket (Appendix II) has ever proved necessary in connection with the working by Train Staff and Ticket on the section Traralgon-Glengarry or Glengarry-Cowwarr during the times, if any, when the Divided Staff provided on the electric staff section Traralgon-Cowwarr is in use for crossings at Glengarry?

Tails of the Rails

Contributions under this heading are invited from our readers. Tales may be humorous or otherwise, and should describe some incident or incidents on an Australian railway. Events overseas, however interesting, are not desired at present. Write clearly, of course, and on one side of the paper.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

The VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at the Model Dockyard, 216 Swanston Street, MELBOURNE; visitors welcome.

LETTERS TO THE EDITOR

The Editor will be glad to receive for publication letters from readers on any aspect of Australian railways—past or present. Contentious matters likely to cause ill-feeling should, of course, be avoided, as also should attacks on railway administrations—these are best made in the press.

OUR RETAILERS

"Railways in Australia" can be obtained from a number of retailers and arrangements are being made for nation-wide distribution. Place a standing order now, or, if this is not yet possible, send a subscription direct to the publishers, TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5, Victoria.

THESE SHOPS STOCK OUR MAGAZINES

MELBOURNE:
- Collins Book Depot.
- Hearns' Hobbies.
- Herbert Small Pty. Ltd.
- McGill's Newsagency.
- Meadmore Model Eng. Co.
- Model Dockyard.
- Technical Books Pty. Ltd.

SYDNEY:
- Hobbyco Pty. Ltd.
- Piccadilly Hobby Shop.
- Price's Radio.

NEWCASTLE:
- New Standard Radio.

BRISBANE:
- Massey's, Sports Store

TOOWOOMBA:
- Aircraft Hobby Shop.

TRAMWAY ALBUM

After many vicissitudes, our long-awaited Australian Tramway Album has at last reached the printers. It was hoped to post out copies ordered before Christmas as announced. A last-minute hitch has occurred in connection with binding, however, our bookbinders having stated that they will be unable to undertake the task before mid-January, owing to shortage of staff. We wish to apologise for this vexatious delay, and to assure readers who have ordered a copy that the books will be sent out as soon as possible.

The album will be on sale at 5/- per copy, and will be posted to any address in the British Empire (except Canada) for this amount. Subscribers in Canada, the U.S.A., and non-British countries should send one dollar (U.S.) or the equivalent.

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(Continued from page 3)

Townsville, Rockhampton and the Permanent Way Shops at Northgate. New station buildings are to be provided at Cairns, Rockhampton, Bundaberg, Maryborough, and Ipswich and Roma Street Station (Brisbane) is to be remodelled and new administrative offices built in Brisbane.

Major track works will include the rearrangement and modernisation of the yard trackage at Toowoomba and Townsville. The open level crossings with tramways and major roads on the Woolloongabba Branch (South Brisbane) will be eliminated by a major grade separation project.

ROLLING STOCK:—To improve long distance mail train services, the Department has ordered eight first-class, twelve second-class, and four compo. saloon type centre-aisle passenger cars of steel construction, with reversible reclining seats, from the Commonwealth Engineering Co., Sydney, at a cost of £450,000. These will be the first all-steel passenger equipment on the system, and may initially require provision of additional engine power on certain lines. But the improved service to "outback" areas and passenger comfort justify any increased working costs which might result temporarily until track and bridge strengthening permit operation of heavier and more powerful locomotives. Seven steel baggage cars and seven steel brake vans are also to be built to match the new equipment.

Thirty suburban cars are also on order from Commonwealth Engineering; the first of which were scheduled for delivery during September last. Ipswich shops are building three KCS type composite sitting-sleeping cars; the first of which should be delivered in March, 1949. An additional standard "Sunshine" type dining car was recently outshopped by Ipswich.

Outside tenders are to be sought for construction of the following:—Nine first-class and nine second-class sleeping cars; six compo. first and second-class sleeping cars; twenty compo. brake vans with lavatory accommodation. Ipswich shops are at present engaged in designing a steel air-conditioned "Sunshine" train, to consist of four first-class and two second-class sleeping cars; a first-class and a second-class chair car; a dining car; a buffet car; a power car (for operating the lighting and air-conditioning systems), and a brake van. Some time may elapse yet, however, before construction can be commenced, owing to shortage of designing staff.

Freight cars on order, or to be ordered, include 200 VTS 11-ton 4-wheel steel hopper cars, of which nearly forty have been delivered by Evans Deakin & Co.; 200 VJM 11-ton 4-wheel steel hopper cars (with removable hopper), to follow VTS programme from Evans Deakin; 200 FJ 4-wheel low-sided gondolas; 55 steel ventilated baggage cars for express service and 25 water tank cars, also on order from Evans Deakin. Twenty CMI 16-ton bogie refrigerator cars for frozen meat traffic were ordered from Commonwealth Engineering in June last. The first twelve of an order for fifty CJF 20-ton louvred box cars have been delivered by Ipswich, but arrears of maintenance have held up completion of the balance, as well as twenty IC 4-wheel cattle cars and fifty K bogie cattle cars, also the conversion of fifty H to HK bogie cars suitable for coke traffic.

Two hundred GVJM 4-wheel hopper cars, one hundred HVS 20-ton bogie gondolas for ores and concentrates, and three hundred HS 22-ton low-sided gondolas, also two hundred W 40-ft. flat cars (similar to those supplied by the Commonwealth Government during the war) are amongst freight equipment for which tenders from outside builders have been called.

Twelve rail motor trains of a larger improved design, each comprising two power cars and a trailer car and seating 150 passengers, are also to be built. Walkers Ltd. have delivered two more of the first batch of C-17 engines on order — No. 957 in October and No. 958 in November.

FREAK EXPLOSION ON OIL-BURNER LOCO.: — During the crews' preliminary examination and preparation of the oil-burning Engine 5537, at Enfield, N.S.W., on the night of September 19, an explosion of considerable violence occurred which damaged the roundhouse, blew the smokebox door off the locomotive, and seriously burned the driver who was standing on the front footplate adjusting the engine marker lights. Subsequent investigation revealed that the oil-burner had only just been re-lit and had become extinguished because of too great a steam jet, whilst the fireman was standing on the tender and the driver was examining the engine with a naked flare lamp. Oil fumes seeping through the supposedly air-tight joint of the smokebox door are believed to have been ignited by the driver's lamp, causing the most violent explosion, which had sufficient force to blow the smokebox door securing crosspiece out of the smoke-box. Otherwise, the locomotive was undamaged.

A similar explosion occurred in Victoria on October 13. Oil-burning A2-class No. 960 was standing on the 1.30 p.m. down Ararat freight at Ballarat station when an explosion occurred in the smokebox which blew open the door, twisted the securing crossbar, damaged the spark arrestor mesh, and brought down plaster and smashed windows in the station building, reports Mr. W. Jack, our Ballarat correspondent.

A.S.G. LOCOS. IN WESTERN AUSTRALIA: Through the courtesy of Mr. O. G. Meyer, Director of Mechanical Engineering, Division of Railway Standardisation of the Commonwealth Department of Transport, we are able to publish the following additional information

OVERSEAS ITEMS

RUBBER TYRES FOR RAILWAYS

The Swiss Federal Railways hope to have equipped all their light-weight express trains with pneumatic rubber tyres within the next ten years. Two trial passenger cars, designed from plans based on fifteen years of research and experiment, are already on order, and were expected to be in operation before the end of 1948. One car will accommodate 46 second-class passengers and the other 76 third-class. They are being built by Swiss engineering firms working in collaboration with the French Michelin rubber factory.

Each of the two coaches is of unconventional design, with twenty wheels, and since each tyre can support little more than one ton, the coaches loaded with approximately five tons of passengers and baggage, may not have a gross weight of more than 22 tons — 43 per cent. less than the existing light-weight steel cars used by the Swiss railways. To achieve this weight reduction, the second-class car will be constructed of aluminium alloy, while the third-class car will be of ordinary mild steel, for comparative purposes.

If the new type cars prove successful in service, they are expected to bring about as great a revolution in Swiss railway operation as did electrification. Apart from the incomparably greater riding comfort and the reduction of rail wear, the use of rubber tyres will noteably improve the braking power of trains. Tests have established that rubber tyres adhere to the rails about th ee times more than steel tyres, and a train equipped with rubber tyres can be brought to a stand from normal operating speed in 150 yards, as compared with the 600 yards needed by a train of conventional construction.

—J.L.B.

concerning fitting of A.S.G. locomotives with oil-burners in Western Australia. As of March, 1948, five had been altered, as follows:—G-31 in 8/47, G-64 in 11/47, G-28 in 12/47, G-44 in 2/48, and G-32 in 3/48. In addition, Engine G-44 was equipped with an Alco steam-operated power reverse (obtained from the Tasmanian Railways), and a speed recorder in February, 1948, for experimental purposes. All twenty-five A.S.G. locomotives on the Western Australian Government Railways have passed through the Midland Junction shops for first-phase modifications and have been returned to traffic between January, 1947, and August, 1948.

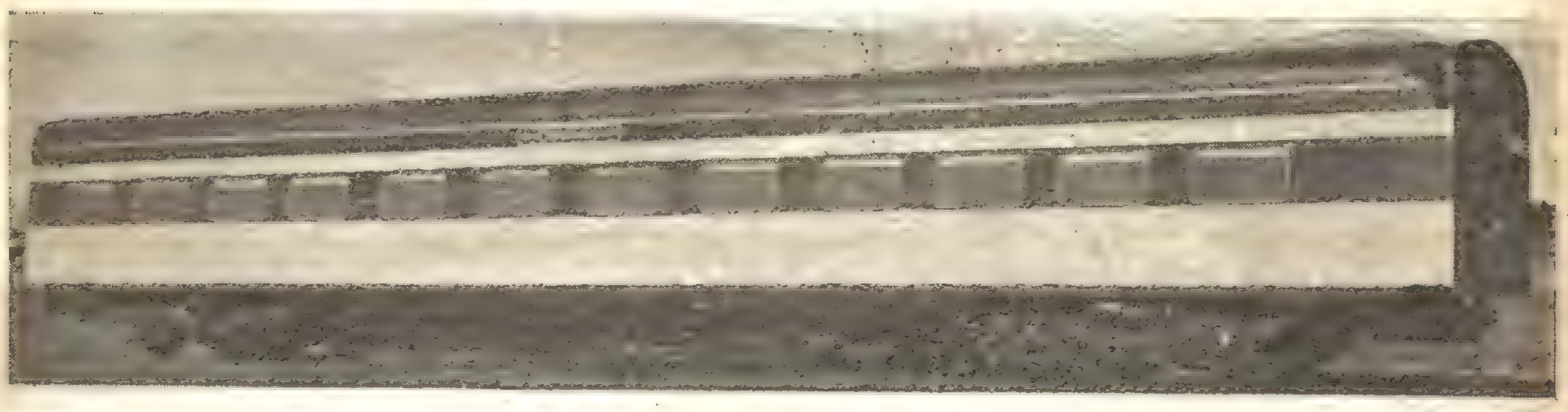
It is interesting to learn from Mr. R. B. McMillan, of Melbourne, that on the night of May 29, 1948, the down Spirit of Progress was run from Melbourne to Seymour by X-class booster-fitted 2-8-2 freight Engine 50. Owing to bad coal and the necessity to stop and clean the fire at Broadmeadows and Donnybrook, Seymour was reached 60 minutes late. There an S-class Pacific took over, but was unable to regain any lost time. This is the first occasion known to the writer that this class of engine has worked the "Spirit," though a brace of A2's, a C, and the H-class 4-8-4 have infrequently done so.

RAIL MOTOR DESTROYED BY FIRE: When running a football special between Junee and Narrandera, N.S.W., on Sept. 9, 1948, a 400-type petrol rail motor caught fire type petrol rail motor caught on fire and was burnt out at Rockview siding, near Marrar. A trailer was uncoupled from the burning motor and was undamaged. None of the 110 passengers was injured.

S.A.R. LOCO. NOMENCLATURE

Corrections listed in our Errata column underline a curious habit of the South Australian Railways, which organisation often describes as "Mountain" types its 4-8-4 locos. as well as 4-8-2's, while 2-8-4's are similarly lumped along with the more orthodox 2-8-2's as "Mikados."

ROLLING STOCK PARADE



NEW ROLLING STOCK

Irreverently known as the "Crushetaria," the South Australian Railways' new Cafeteria car is a fine example of modern Australian rolling stock construction. Of special interest is the exterior panelling of anodised aluminium alloy. The interior view shows the unorthodox seating arrangements.

Shown below is one of the new "Westland" cars introduced recently by the Western Australian Railways (see September and October issues). (Blocks by courtesy Victorian Railways.)

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(Continued from page 2)

editorials will antagonise the very railway departments from whom your magazine requires the greatest of co-operation. If these departments read your editorials, disfavour will be cast on anyone associated with or whose name appears in your magazine.

2. As this is a magazine about Australian trains and not about Australian politics, and whether the railways read your editorials or not, the space allotted to them could be better used in printing articles of interest to railway enthusiasts, or in reprinting any information in a less provocative style.

In Letters to the Editor, you say: "Contentious matters likely to cause ill-feeling should of course be avoided," and I suggest that this apply to editorials. As a constructive suggestion, I enclose an article on a fast goods train which I consider will prove of greater interest than an editorial of the same length.—Yours faithfully,

E.S., Melbourne, Vic.

The following is an extract from a letter to our News Editor (Mr. J. L. Buckland) by Sir Harold Clapp:

. . . May I say how much I appreciate your advocacy of standardisation and complete modernisation in all branches of railroad operation. I know that you fully appreciate at the moment that it is an uphill game, but I am sure that the dawn of a new era of railroad development in Australia is approaching, and I sincerely hope that it will not be too long delayed. Keep up the good work you are doing. The article I have just read is full of modern thought.—**Yours sincerely,**

HAROLD W. CLAPP.

The Editor,
"Railways in Australia."

Dear Sir,—Referring to your editorial of November, I am in complete agreement with the views of the editor. It is up to railfans to take an active interest in the welfare of Australian railways. Modernisation of our railways has been disgustingly neglected over a long period of years, and now it presents a mammoth task. Since the end of the war, improvements to rail passenger service and equipment have been very few, yet new, fast, luxurious buses and planes are being placed in service at an alarming rate, and every day sees more prospective passengers lured away from rail travel. Railway competitors are giving first class service—it is up to the railways to do likewise. Your editorial strikes the right note. Continue the good work.—Yours, etc.,

(Name and address supplied.)

(The writer is a South Australian reader.—Ed.)

The Editor,
"Railways in Australia."

Dear Sir,—Because of considerable adverse comment resulting from the outspoken opinions voiced in editorial comment written by me, it should be noted that I accept full personal responsibility for what are my own opinions as published. These opinions do not necessarily in any way reflect the views of the Australasian Railway and Locomotive Historical Society, nor of "Railways in Australia," which published them without prejudice as "informed opinion." It is essentially fair comment upon matters of great moment, and which should be of some concern to the community at large. These columns are open to any constructive opinion on the subject of railways in Australia. Freedom of expression—and that presupposes freedom of the press—is an essential cornerstone of Democracy.—Yours, etc.,

J. L. BUCKLAND, Melbourne, Vic.

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park. Addresses will be found on page one.

Due to last-minute haste, a number of serious errors occurred in the captions to illustrations in recent issues.

OCTOBER

The caption for another picture was inadvertently used for the cover photo. The loco. was No. 861 (not 895). Our apologies to reader Ken Rogers.

NOVEMBER

The loco. depicted on our cover photo. was, of course, No. 525, which was erroneously described as a 4-8-2. The 520's are actually 4-8-4's.

In our Favourite Photo., No. 704 was a 2-8-2 type, not a 2-8-4. Our apologies to Mr. Grimwade.

We are advised that the photo. used for the cover of our November issue, although from the collection of Mr. C. L. Busch, was actually the work of Mr. J. Leach. Our apologies for inadvertently omitting the credit due to Mr. Leach.

OUR COVERS

After experimenting with various types of paper for our covers (with results that will have been apparent to our readers), we have decided to standardize for the time being on that used for this issue. When high-class paper becomes cheaper, we shall reconsider the matter.

Also, commencing with this issue, we shall discontinue the reproduction of our cover photo. on an inner page, unless sufficient readers wish us to continue the former practice.

GERMAN "BLINKERS"

Following the recent visit to Germany of two V.R. engineers, the Victorian Railways have fitted with German-type smoke deflectors "C" class loco. No. 22. Also fitted for oil-burning, this 2-8-0 presents an odd appearance to Australian eyes. The new deflectors, which are smaller than those in regular use on the V.R., were developed by the Germans during the late war in an effort to save steel. It is claimed that smoke is lifted higher and further away from the engine cab, and that greater accessibility is provided. (Block kindly lent by V.R.)

Railways in Australia
and
A.R.L.H.S. BULLETIN
The Magazine about Australian Trains

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RAILWAYS ELSEWHERE

There is always a certain bitter-sweetness in reading railroad literature from the U.S.A. Not only the great technical advances being made in that country, but also the large number of new orders for motive power and rolling stock — passenger and freight — are at once an inspiration to us in this country, and a source of regret that our own railways should lag so far behind.

To illustrate this, we quote briefly from a recent issue of "Trains." One car-building firm alone " . . . delivered 118 new passenger cars in the first half of 1948 . . . backlog now stands at 554 cars . . ." Of freight equipment, the following are a few examples: ". . . C. & O. . . . has ordered another 1,000 70-ton hoppers . . . Grand Trunk Western has ordered 500 40-foot box cars from ACF and 200 50-foot box cars from Pullman Standard . . . Katy has completed a 200-gondola building programme at its Denison shops . . . D. & H. is building 300 box cars and 200 gondolas in its own shops . . . G.M. & O. is buying 500 50-ton gondolas from ACF, 500 50-ton hoppers from Pullman Standard. Alabama Great Southern has ordered 150 gondolas from Pressed Steel . . . Copper Range has 23 50-ton box cars on order . . . N.C. & St.L. has 500 50-ton gondolas and 500 50-ton hoppers on order with Pullman Standard . . . Mather Stock Car is building 100 40-ton reefers for itself . . . K.C.F. has on order 400 70-ton hoppers . . . Lackawanna is buying 200 50-ton box cars from Pullman Standard, 300 more from Magor, plus 100 70-ton covered hoppers from ACF . . . Clinchfield is buying 500 50-ton hoppers . . ." And so it goes on — the saga of American railroads. Note, too, the high capacity of the cars; none of your 22-ton midgets to tackle a man-sized job. Of motive power, we lack space to quote details, but elsewhere in this issue is an account of a new type of locomotive which may revolutionise the industry.

Of greater importance, however, than the quantities involved, is the answer which these orders provide to those in this country who endeavour to spread the idea that railways are obsolete. American railroads are private, commercial organisations, owned and operated by hard-headed businessmen. It is scarcely to be thought that such men would invest billions of dollars in a dying industry or an obsolete form of transport.

WHAT WE THINK!

With the Xmas holiday period intervening, it is necessary for this issue to go to press hot on the heels of that for December. This leaves little time for the receipt of further comment from our readers on the vexed question of our editorial policy (alleged by some to be detrimental to the interests of rail fans). Comment so far received, although extensive, has, with very few exceptions, originated from Melbourne; we should have preferred a more general expression of feeling. However, before finally deciding our future editorial outlook, we have asked the Australasian Railway and Locomotive Historical Society for an indication of the official opinion of that body.

Personally, we feel that any journal worthy of its salt should have a positive policy, and stick to it. What more worthwhile object could there be than the encouragement of the modernisation of railways in Australia?

(Further correspondence received is printed on page 18.)

XMAS CARDS

The Editor gratefully acknowledges receipt of Xmas Cards from many friends and well-wishers; it is not possible to respond personally in all cases, but the good wishes are most heartily reciprocated.

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

POINTS FROM V.R. ANNUAL REPORT.—The year's operations (to June 30, 1948) resulted in a deficit of £1,074,366, which is £407,802 less than that for 1946-7. Due principally to the increased freights and fares effective since October 1, 1947, revenue at almost £16½ millions was over £2¾ millions greater than for the previous year. This was offset by the rise in working expenses by £2,327,388 over the previous year, to the unprecedented total of £15,335,060. Higher wages and salaries, the 40-hour week, and other concessions to employees were responsible for almost £1½ million of this increase. Unless immediate substantial increases in freight rates and fares are authorised by the Government, the deficit for 1948-49 may be considerably higher. Victorian Railway freight rates are considerably lower than comparable charges in all States except South Australia.

Compared with 1938-39, suburban passenger journeys have increased by 26 per cent., and country by 70 per cent. (The disproportionately large increase in country journeys is explained by the development of near-country residential areas on electrified lines outside the "suburban" area, such as Frankston, Hurstbridge, Lilydale, etc.).

Freight and livestock tonnage handled was greater by 58 per cent. than for 1938-39, and average length of haul increased from 127.26 to 136.81 miles; freight and livestock net ton-mileage increased by 52 per cent.; net loaded tonnage per vehicle rose from 8.25 to 10.43 tons; ton miles per vehicle per day increased from 144.31 to 219.8 and gross ton miles per engine hour from 4,056 to 4,114.

Increased efficiency in operation is evidenced by the fact that increased freight traffic was handled by an increase of only 7½ per cent. in freight train mileage. Freight traffic records were set by the haulage of 508,650 tons of superphosphate (more than 80 per cent. in the last six months of the financial year); 700,000 tons of briquettes and brown coal; 253,000 tons of flour for export; and 210,000 tons of oats and barley. At the peak of the harvest season, 486,000 tons of wheat were moved by rail in ten weeks, simultaneously with other export traffic. In view of the severe handicap imposed by equipment and staff shortage, increased costs, coal shortage and industrial unrest, the foregoing results are a creditable achievement in the face of great odds.

VIC. MARKS BULK WHEAT CARS FOR RAPID HANDLING.—The V.R. are marking bulk wheat cars with 2-in. diagonal yellow bands on right-hand diagonal corners for easy identification by yard crews. Owing to the identical appearance of 16/22 ton and 16/27 ton cars fitted for bulk wheat transport with those not wheat-proofed (*viz.*, IZ and the new HY-class) these distinctive markings of sides and ends of G, GY and GZ-class cars will expedite shunting, reduce delay and congestion by speeding up vehicle turn-around.

BLOOD BANK CAR IS W.A. INNOVATION.

Probably unique on the world's railway systems, a mobile blood transfusion car went into service on the Western Australian Government Railways on November 12, 1948.

The car, originally a second-class AF-type suburban coach, was converted for use by the Australian Red Cross Society, and internally reconstructed and fitted out at the Midland Junction shops. Painted white externally, the interior is fitted with an office and reception compartment, a bleeding theatre with four couches, a blood processing compartment with refrigeration, a rest and living compartment for the staff, with couches, table, wardrobes and cupboards, a kitchen, hot and cold water supply, cupboards and an instrument, etc., steriliser. A lavatory and toilet compartment is provided and fitted with a hot and cold shower bath. All internal compartments are finished in white enamel.

The car measures 46-ft. 4-in. in length over body with an inside width of 7-ft. The tare weight is 20 tons. It is believed to be the only railway car of its kind in the world, and will tour country areas throughout the State for the collection and immediate treatment of blood from donors unable to make the journey to the Red Cross Society's blood bank in Perth.

INTER-SYSTEM FARES, FREIGHTS RISE.

Effective from December 1, rises of between 11 and 17 per cent. occurred for second-class single fares between interstate stations. Freight rates, involving movement over one or more systems, have also risen by approximately 10 per cent. Both first and second-class fares on the Commonwealth's Trans-Australian and Central Australian lines have been increased by 25 per cent., whilst freight increases vary according to the classification of the shipments. Passengers who had booked up to 28 days in advance escaped the increased charges, which bring railway inter-system single fares almost to the level of airline charges. Return railway fares (where available) are still a little under prevailing airline rates.

W.A.G.R. "WESTLAND" TRAINS.

Mr. Brian Castle, of Adelaide, advises that the second "Westland" train was tested between Midland Junction and Spencer's Brook, and was placed in traffic on May 31, 1948, two weeks ahead of schedule. Each set comprises three new all-steel AH-type sleeping cars, three renovated ARS second-class sleeping cars, a 40-seat dining car, lounge car and ZJ-type baggage car. This set is the fifth new train designed and constructed in the W.A.G.R. shops in the past 2½ years — two five-car suburban trains, two "Westland" trains, and "The Australind" (see description and picture in next issue).

HIGH-SPEED DIESEL CARS FOR S.A.R.

Fifteen 400 b.h.p. diesel railcar units of the most modern type in the Commonwealth are being built at Islington Shops for use on light-traffic lines in South Australia. The cars will be 75 ft. overall in length, and will have tubular steel-framed seats and may be air-conditioned. Power cars will have two 200 b.h.p. diesel engines mounted under the floor with pneumatic remote control, enabling multiple-unit operation. The new cars will have rapid acceleration, and be capable of operating at high speeds.

S.A.R. ROLLING STOCK CHANGES.

Engines 606 and 609 have been equipped with mechanical stokers in 10/1948 and 9/1948, respectively. Narrow gauge Y-class 2-6-0's Nos. 82 and 97 were re-issued to traffic on the Peterborough Division from storage at Islington Shops in August, 1948. Passenger cars 379, 447 and 709 have

been altered from second-class to first-class. More than 100 of the initial order for 200 new-type 16-ton 4-wheel gondola cars, designated OF-class, have been delivered from Islington Shops in the last six months. Of all-steel welded construction, these cars are being built to replace obsolete Y-class gondolas, and are comparable in dimensions and appearance to V.R. HY-class gondolas. By careful attention to design, use of pressed steel ends and doors, elimination of side buffers, tare weight has been kept to the remarkable figure of under 8 tons. The dimensions of OF gondolas are 22 ft. x 9 ft. x 4 ft. 6 in. By application of heavier springs and axles, the design is readily adaptable for increased capacity of 22 tons, for suitable bulk consignments. For the first time "Peerless" friction draft gear has been used. This is of higher capacity, lighter and more readily adjustable, and its maintenance costs will be appreciably less than the present standard type. An additional 200 similar cars will be constructed to follow the present order.

The first three new specially-built gondolas, designed for transport of motor bodies and designed as OA-class, are stated to be in service. Like all new classes of freight cars issued to traffic now and in future, their numbers commence from 1. This policy began with the conversion of standard O-class bogie cars to OM-class, fitted for motor body carriage.

QUEENSLAND PURCHASES EQUIPMENT OVERSEAS.

Locomotives, steel rails, plates and structural steel supplies for the Queensland Railways are being sought in France and Belgium by the Premier (Mr. Hanlon). Supply of six hundred steel freight cars is sought from British builders, and the Minister for Transport (Mr. Duggan) is seeking Cabinet authorisation for ordering an additional £5,250,000 worth of locomotives and rolling stock. The Commonwealth Government is being approached to see if dollar credits can be arranged to make purchases of railway equipment from the United States. Mr. Duggan also revealed that Queensland Railways had planned to order three diesel-electric locomotives from Clyde-Electromotive for a trial, but this had been prevented by the dollar shortage which stopped Victorian, South Australian and New South Wales Railways from ordering similar units.

NEWS IN BRIEF

NEW SOUTH WALES.

On November 24, 1948, the second air-conditioned Newcastle Express set commenced service, and effective from that date mid-day fliers have resumed operation in each direction, Mondays to Fridays, inclusive. Two air-conditioned sets now work the complete intercity express service, each making three single trips per day. First of the new air-conditioned "Daylight" trains is expected to be in service early in 1949. New trains for Daylight express services will feature centre-aisle cars with reclining seats for first-class and reversible-back seats for second, and each train will include a 27-seat counter service buffet car in the consist. They will replace existing sets operating between Sydney and Albury, Parkes and Dubbo, Tamworth and Kempsey. A report (as yet unconfirmed officially) suggests that N.S.W. G.R. may cancel outstanding orders for S and U-type four-wheel gondolas, and adopt instead a standard bogie gondola of approximately 40-tons capacity for all bulk traffic. Double-line operation between Kingsgrove and Herne Bay (on the East Hills suburban line) was inaugurated on November 30, 1948. During the change-over, an emergency shuttle service of steam trains ran between Tempe and Kingsgrove, and road buses between the latter and Beverly Hills, where connection was made with rail motors to East Hills. Automatic colour light signalling has been extended from Kingsgrove to East Hills, with single Line Track Block working between Herne Bay and East Hills. A mobile buffet trolley serving hot drinks, pies, cakes and sandwiches is now operating at Albury station. An interesting proposal for provision of an extra track between Branxton and Muswellbrook (45½ miles) on the main North to cope with saturation coal traffic is being considered. By using reclaimed light rails with a temporary speed limit for the second track (until new rail is available), with full crossing facilities, the equivalent of double track could be achieved, retaining Miniature Electric Staff, or Tablet operation, on the existing line, and installing large-type Electric Staff for the relief line sections. Bridges and culverts and much of the earthworks are already suitable for double track, which at present ends at Branxton, 134 miles from Sydney.

VICTORIA.

Pulverised brown coal burning equipments for two locomotives arrived in

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Victoria.

Melbourne from the makers, Henschell & Sohn, Cassel, Germany, in November. They will be applied to an N-class and an X-class locomotive for thorough testing, which may determine if pulverised brown coal can be successfully used for locomotive fuel. Tests conducted in 1922-3 were unsuccessful to inconclusive, but the equipment used then was not specifically designed for brown coal fuel. Design of a special covered hopper car for transport of pulverised brown coal from the State Electricity Commission's pulverising plant at Yallourn to locomotive fueling points is being undertaken. Effective November 15, 1948, the electrified double track line from Royal Park to North Fitzroy was closed for passenger traffic. North Carlton electric trains had been earlier withdrawn during electricity rationing. Only steam freight trains now normally operate on this line. Whittlesea line is served by a rail motor connecting with electric trains at either Reservoir or Thomastown. North Carlton and North Fitzroy stations have been reduced in status, and closed for passenger and parcel business. A private siding serving the works of the Western District Cement Co. at Port Fairy was brought into use on November 10, 1948. Saturated A1-class 4-6-0 No. 814 (originally 869 A2) was converted to superheater, renumbered 819, class A2 in November, 1948. Only three A1 engines remain for conversion to superheater. Contract for the first portion of the earthworks for the duplication of the main Gippsland line between Longwarry and Yarragon — the section Drouin to Nilma — has been let to Theiss Bros., contractors. Earthworks between Nilma and Yarragon will be carried out by Roche Bros. Pty. Ltd. If agreement can be reached as to apportionment of costs between the Melbourne City Council and the Victorian Railways, a 20-ft. wide passenger subway entrance to Flinders Street Station, Melbourne, will be constructed under Flinders Street from Degraves Street, opposite the centre entrance to the station. City Engineer P. S. Robinson estimates cost at £60,000. New standard 4,600 gallon semi-welded, straight-sided tender tanks have been provided for N-class Engines 118, 119 (also equipped with muffled blow-down apparatus), and 129; also some C-class engines . . . Muffled blow-down fittings are to be provided for all engines equipped with all-steel boilers as they pass through the shops. Tenders have been sought for the supply of standard A2-class boilers required for replacements. The Clyde Engineering Co., N.S.W., was the successful tenderer.

New brick station buildings are being constructed at Springhurst, Victoria . . . Despite cancellation of the Royal Tour, the V.R. will complete construction of a new air-conditioned steel state car for vice-regal use. In an endeavour to reduce standing time of main line freight locomotives on arrival at North Melbourne, but prevented from entering Melbourne Yard because of traffic congestion, some freight train classification has recently been undertaken in the South Side sidings at North Melbourne Locomotive Depot as an emergency measure. The large gravitation marshalling yard at Tottenham (between Sunshine and West Footscray on the main freight avoiding line), which has never been completed, has been more extensively used to relieve Melbourne Yard congestion during and since the war. But, until the reception sidings and some of the first classification tracks have been installed or completed, this yard can never function as was originally intended. Lack of a direct connecting line between Tottenham yard and the Sunshine-Newport freight line, towards Newport, is also a limiting factor . . . According to a recent V.R. news release, the four S-class Pacifics have together run a total of almost 5,000,000 miles — each had run well over a million on July 24, 1948. No. 300 has run over 1¼ million miles since March, 1928. The H-class 4-8-4 No. 220 has run almost 500,000 miles since February, 1941. Two of the original all-welded 13,000 gallon tender tanks from S-class Pacifics now serve as a bulk fuel oil storage at Traralgon locomotive depot. Many auto signal masts in Jolimont Yard, Melbourne, are now painted silver aluminium in place of the former drab gray, to test the corrosion resistance of the metallic paint. Visibility amongst the forest of overhead structures and appearance are certainly enhanced. Concurrently with augmented Christmas holiday schedules which commenced December 17, the V.R. began another through diesel rail car service between Mansfield and Melbourne. This is provided by a 153 b.h.p. unit operating a trailer car between Yea and Melbourne. Non-stop running is scheduled over the 56 miles between Tallarook and Melbourne in each direction. The service operates Up in the morning and Down in the afternoon.

TASMANIA.

Steam-operated butterfly firedoors fitted to T.G.R. Q and R-class engines are to be restored to working order. A test of the "master mechanics" front end arrangement is to be made with DS-class Engine, No. 7, in the Hobart suburban service, whilst rocking grates are to be fitted to remaining A, B and T-class engines to aid greater use of native coal for locomotive purposes. A T-class engine is to be equipped with an extended smokebox and cyclone front end of the type which has proved successful on similar engines on the South Australian Railways.

The first two Vulcan diesel-mechanical 200 b.h.p. shunting locomotives for the T.G.R. arrived at Burnie early in September on the "Port Hobart," and were railed to Launceston. They are jack-shaft driven 0-6-0's with a Gardner 204 b.h.p. 8-cylinder engine. Builders' numbers are 2227 and 2228.

QUEENSLAND.

Yellow fog marker lamps may be experimentally installed in the vicinity of the Down (northbound) distant and home signals at Rangeview and Ballard crossing loops on the main line climbing the Toowoomba Range, where, owing to the severity of the curvature and grade, signal siting for trains descending the grade presents unusual difficulty.

WEST AUSTRALIA.

The Western Australian Minister for Transport (Mr. Seward) has introduced a Bill in the State Parliament amending the Railways Acts to enable the appointment of a board of Railway Commissioners in place of a single Commissioner, and to provide for separate control of the W.A. Government Tramways and Ferries, as recommended by the recent Royal Commission. W.A.G.R. have tested cyclone front ends in engines P 509, ES 399 and PR 526, operating between Northam and Clackline. Various other front end experiments are under test, together with modification of spark arrestor layouts. Engines 288 FS and 349 ES are being tested with bushed cylinders, and various diameter blast pipe caps with the nozzles lower in the smokebox than usual. Altered spark arrestors and blast pipe sizes and heights are also under test in Engines 311 ES and 583 DM.

COMMONWEALTH.

The Commonwealth Railways have abandoned their intention of transferring three surplus NFB 2-6-0 locomotives from the Northern Territory to the Central Australian line.

EMERGENCY HOUSING for up to one thousand single and married men in hostels and temporary camps is to be provided by the New South Wales Railways adjacent to Chullora Workshops. The camps may take the form of permanent mobile units which can be used for housing construction workers at other points on the system.

POULTRY FARMERS DEMAND BETTER RAILWAY EQUIPMENT.—Delays incurred in the shipment of eggs by rail from farms to egg-grading depots were costing poultry farmers an average of £50,000 per annum, according to a statement by the secretary of the National Poultry Farmers' Association (Mr. C. A. Hurst) on October 2. More modern rolling stock, better hand-

Continued on Page 20

The Steam TURBO-ELECTRIC LOCOMOTIVE

By Charles Kerr, Junr., Consulting Transportation Engineer, Westinghouse Electric Corporation.

(From "Electrical & Radio World.")

The family of practical types of locomotives is growing. Until about the turn of the century the locomotive family consisted of a single member — the reciprocating steam engine, now well past being a centenarian. First there came the electric locomotive, followed a decade ago by the Diesel-electric, and three years ago by the geared-turbine steam unit. And now we have the coal-burning turbine-electric steam locomotive. On the horizon can be seen still another — the gas-turbine-electric locomotive. The situation in railroad motive power is by no means static.

These Chesapeake and Ohio locomotives are America's first materialisation of coal-burning turbine-electric steam-type motive power. They represent, in novel arrangement, a combination of elements all previously employed on locomotives. Each has the coal-fired steam boiler traditional to the reciprocating locomotive, a steam turbine essentially similar to the one that has proved successful in the Pennsylvania Railroad S-2 geared-turbine unit, and the electric drive common to the currently popular Diesel-electric locomotive. These new turbine-electric engines possess no fundamentally new elements untried in railroad service. The arrangement of these components, however, is unusual. At the front is the coal bunker, followed, in succession, by the operator's compartment, the boiler, and finally the turbine-generator power plant. Water is carried in a separate tender behind the locomotive.

The rightful place of the turbine-electric steam locomotive in the railroad scene will depend on its operating performance at different speeds and loads, efficiency, availability, maintenance requirements, first cost, and other factors important to railroad operators. Obviously, some time must elapse before these can be set down with clarity.

Briefly the turbine-electric locomotive assumes some of the performance colourations of all types. Being a steam locomotive it can burn coal, which makes it attractive to railroads traversing coal regions. Its starting and high-speed tractive-effort characteristics are superb, and correspond to those of the Diesel-electric locomotive. With regard to thermal efficiency, simplicity of operation, and freedom from reciprocating forces, it closely resembles the geared-turbine locomotive.

Although the locomotives are intended for high-speed passenger service, the turbine-electric principle is extremely well suited to all types of freight operation.

The propulsion equipment was designed to operate with a conventional fire-tube boiler, and at pressures and temperatures commonly used with such boilers. The turbine receives steam at 290 lb. pressure and 750 degrees F. total temperature. The turbine develops its rated 6,000 h.p. when supplied with 85,000 lb. of steam per hour, exhausting to atmosphere, and when operating at 6,000 r.p.m. Geared to the main turbine are two double-armature, direct-current generators, operating at a maximum speed of 1,000 r.p.m., which supply power to the eight axle-hung traction motors that furnish main propulsion power, two motors being permanently connected in parallel across each generator armature.

Speed of the locomotive is controlled by a variation of the generator excitation and the main turbine speed, the combination producing the maximum overall efficiency and simplification.

The expected performance of the turbine-electric steam locomotive is compared in general terms with that of Diesel-electric locomotives of similar rating in Fig. 1.

The electric transmission of the Diesel and the turbine-electric provides considerably better tractive-effort performance in the low-speed range at some sacrifice in output at the higher speeds. With the geared and electric types built for a maximum speed of 100 m.p.h., the point at which the curves cross is between 40 and 45 m.p.h. Fundamentally, the geared-turbine locomotive is better suited for territory where few severe grades are encountered, and where high-speed operation predominates. With it, the losses incident to electric drive are avoided, but the absence of the torque-conversion characteristics of electric transmission handicaps both its starting and low-speed performance.

The turbine-electric and the mechanical-driven turbine systems both have their advantages and limitations. The turbine-electric drive is somewhat heavier, mainly because of the d-c generators. However, the electric-drive turbine runs continuously, in the same direction, never slower than 60 per cent. of rated speed. This means much reduced steam demand on starting. The mechanical drive requires a separate small turbine and clutch for reverse operation. As compared to the mechanical-drive Pennsylvania locomotive, which has all the power applied to four pairs of drivers, the C & O locomotives have power on eight axles.

Electric drive increases the overall flexibility of the locomotive. High starting power is provided for severe grades; ample tractive effort at the lower speeds is furnished for hauling heavy trains over these grades without helpers, and, in locomotives of this size, sufficient power still exists in the upper speed range to handle the desired tonnage at any permissible operating speed.

The turbine-electric steam locomotive should introduce no new maintenance problem. Maintenance of electrical equipment will correspond to that of the Diesel type. The turbine-electric has no slow-speed reciprocating parts. The turbine should add but little to the maintenance programme.

Industrial and central-station turbines are singularly free from maintenance difficulties. With the turbine-electric locomotive, vibration and track-pounding forces will be absent, as with the geared-turbine unit. It should provide easy, smooth starts as does the Diesel-electric locomotive. Its operation will require no skills new to railroad practice.

Comparison of Turbine and Diesel Locomotive Types

	Turbine Electric 6000 h.p.	Geared Turbine 6900 h.p.	Diesel Electric 6000 h.p.
Total weight loaded—lb.	1,194,800	992,900	1,005,000
Weight on drivers—lb.	508,000	260,000	696,000
Total wheelbase—feet	140	108	182
Starting tractive effort—lb.	98,000	70,500	174,000
Continuous tractive effort—lb.	48,000	—	79,200
Prime mover horsepower for traction	6,000	6,900	6,000
Maximum rail horsepower	5,100	6,550	5,100
Locomotive weight—lb. per h.p.	199	143	168

These figures are on the basis of eight powered axles for the turbine electric, four for the geared turbine, and three cabs with twelve powered axles for the Diesel electric.

PERSONAL.

The resignation has been announced of Mr. M. J. Canny, one of the three Victorian Railways Commissioners. Mr. Canny has a long record of service with the V.R., and has been a Commissioner for eleven years.

WHOSE FACE WAS RED?

Recently, during "looping" (turning) the **Spirit of Progress** after arrival in Melbourne, before stowing the cars away in the Dudley Street Shelter Shed for cleaning and inspection, a shunter clinging to the side of the parlour car had the misfortune to get his clothes entangled in a hand point lever; result, parlour car derailed when points split, and shunter de-trousered!

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THE WAITING ROOM—
Letters to the Editor

The Editor will be glad to receive for publication letters from readers on any aspect of Australian railways—past or present. Contentious matters likely to cause ill-feeling should, of course, be avoided, as also should attacks on railway administrations—these are best made in the press.

The Editor,
Railways in Australia.
Dear Sir,

In response to the request in your recent editorial for an expression of views of readers on your policy concerning criticism or non-criticism of Railway administrations, I take pleasure in submitting my views.

Unless you are prepared to be a mere recorder of facts and a historian in the narrowest sense, I cannot see how you can avoid criticising various aspects of the administrations' activities, past and present. By all means, continue with your critical commentary, and you can, if you remain fair and constructive, do nothing but good. There has been in the past too much smugness and complacency — hence the backwardness of the Australian railway systems compared with equivalent systems in other lands (S. Africa, Canada, etc.).

I very much appreciate your new publication, which I pass round when I have read it, and I wish it every success, which your efforts richly deserve. You are probably as well aware as anyone of such shortcomings as poor photographic reproductions, etc., and, no doubt, will do your best to overcome them.

But please don't mar the magazine by adopting a policy of yes-ism.

Yours, etc.,
I. P. BERLINER, Engr. Insp.,
Ways & Works Branch, N.S.W.R.,
Sydney, N.S.W.

The Editor,
Railways in Australia.
Dear Sir,

I was very disappointed to find that your editorial was curtailed in the November issue, owing to criticism by some readers. To my mind, this appears to indicate a lamentably narrow outlook towards their hobby. If the railways cannot count on the likes of readers of "Railways in Australia" as active supporters and propagandists, it is a poor outlook. The railways, both in Australia and New Zealand, have a desperate need for well-informed critics to speak out and mould public opinion in the required direction. To carry out the tremendous work necessary to modernise the railways and give them a fair chance against their competitors, requires a lot of public enthusiasm. The dismal persistence of Australia's gauge problem can be put at the door of public indifference, combined, in later times, with the ill-effects of opposition propaganda about railways being obsolete. This propaganda is not half-hearted.

I considered your editorials to be instructive as well as constructively critical, and, above all, interesting. To say that they served no useful purpose is perhaps being defeatist. Anyway, it is a fascinating business to view one's factual knowledge in the light of policy. Surely every railway enthusiast with imagination must inevitably end up by thinking of how he would run the railways. It is worth doing for its own sake. Will it get anyone anywhere? If that is the attitude, then does the study of the locomotive get anyone anywhere? A locomotive enthusiast doesn't care a jot about that. It really all boils down to whether those whose interest in railways has advanced to railway policy matters or politics should have this part of their interest ruled out of the magazine and out of the hobby. It seems dangerous to discriminate against different aspects of the hobby. Perhaps later, loco. enthusiasts will try to eliminate train working enthusiasts, and so on. No, I think the magazine and the hobby should be all-embracing, and, if a study of railways does not lead finally to some pertinent and possibly useful opinions as to how they can be improved, it is a rather sterile study. However, I do think that public criticism should be fair and restrained, as I readily admit the necessity of good relations with railway administrations.

I hope an N.Z.-er is not putting his head out too far, as your magazine is, after all, primarily Australian, but I did feel rather annoyed about the negative reaction to your editorials, which I had

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post in due course; please enclose a stamped, addressed envelope.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

The VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at the Model Dockyard, 216 Swanston Street, MELBOURNE; visitors welcome.

Question Box

Questions on any aspect of railway operations, past or present, in Australia, may be sent to this journal. Mark the envelope distinctly "Question Box." If we don't know the answer, we'll endeavour to find out, and, if all else fails, we'll print your question and leave it to our readers. (It is regretted that direct answers cannot be posted to correspondents).

Tails of the Rails

Contributions under this heading are invited from our readers. Tales may be humorous or otherwise, and should describe some incident or incidents on an Australian railway. Events overseas, however interesting, are not desired at present. Write clearly, of course, and on one side of the paper.

appreciated so much, and which carried the magazine banner so appropriately.

Yours, etc.,
J. D. MAHONEY,
Auckland, N.Z.

The Editor,
Railways in Australia.

Dear Sir,

If your magazine is to be called a rail-fan magazine, it may be well to try some time to define the term "rail-fan." It has always seemed to me an unfortunate one, calling to mind the rather irresponsible crowds that chase film stars or hunt autographs — or the types on American excursions who wear "engineers'" caps and like to ride the loco., sitting astride the boiler if possible. It seems a rather trivial term to apply to, for example, the valuable historical work done by capable writers in the Bulletin section.

In other words, I think that, while a magazine like yours must cater for "rail-fans," it should endeavour to be serious enough to find its way into responsible circles, where your editorials could do a lot of good.

Yours, etc.,
J. D. MAHONEY,
Auckland, N.Z.

OUR RETAILERS

"Railways in Australia" can be obtained from a number of retailers and arrangements are being made for nation-wide distribution. Place a standing order now, or, if this is not yet possible, send a subscription direct to the publishers, TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5, Victoria.

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TOOWOOMBA:
Aircraft Hobby Shop.

Twelve Hours in a Fast Goods
by E.S.

For perhaps the last twenty years, the passenger service on the Mildura line beyond Woomelang has consisted of an Up and a Down passenger train leaving both Melbourne and Mildura in the evening, and arriving early the next morning. Because of this purely nocturnal service, it is said that the Stationmaster at Lascelles (248¼ miles from Melbourne) has never seen a passenger train in the daylight — although there was an Up car goods in the early hours of Monday morning, Ouyen to Woomelang, in 1934.

By the time I want to see the line and the country, in March, 1939, the only satisfactory way of doing so is by a fast goods listed in the WTT as No. 36, and running on Wednesdays only. The timetable shows this train as leaving Mildura at 9.20 a.m. and arriving in Melbourne at 2.30 a.m. the next morning. I decide, however, that by the time I reach Maryborough, 239½ miles south, at 8.5 p.m., I shall have seen enough — an accurate forecast!

Arriving at Mildura station one beautiful Wednesday morning, I find A2 No. 903 standing in No. 2 road with a train consisting of a bogie louvre and a Z van. While I am in the office signing my indemnity, the Stationmaster goes out to collect the staff from the fireman of A2, No. 954, which arrives on a Down goods in the platform road. The S.M. rings the changes on the Irymple staff instrument, while I vainly try to explain why I should want to make a goods train journey to Maryborough. "If you had to," he tells me, "You'd complain to your union." I walk across with him when he takes the staff to the driver. The guard looks out, flag in hand, and opens the door for me as the S.M. tells him the destination of his passenger. "Mad!" says the guard. "Anyone who wants to look at the country between here and Donald should be locked up!" I climb up out of the way into the right-hand cupola seat. There are four others in the van — the two painters going to Redcliffs, the train examiner for Irymple, and the electrical fitter to Carwarp. At 9.20

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

New Zealand Railways AB class Pacific, No. 762. With a grate area of 33 sq. ft., adhesive weight of 29 tons, 17 cwt., and a boiler pressure of 180 lbs., this machine has a tractive effort of 20,000 lbs. Cylinders measure 17 x 26 ins., drivers 4 ft. 6 ins. diameter, and the all-up weight is 84 tons 15 cwt. Track gauge is 3 ft. 6 ins. No. 762 was snapped by reader W. W. Stewart, of Auckland, N.Z.

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the S.M. lets the train out of No. 2 and my endurance test has commenced!

After a stop at Irymple to set down the fitter, we arrive at Redcliffs. Here, after loading dried fruit at the platform, we are set back and turned into the crossing loop. By now, the Up goods from Morkalla is whistling at the branch home, and is let into the platform. Some I's and louvres come off the branch, and, by the time the shunting is completed, 36 really looks like a train. Time has been lost at Redcliffs waiting this connection and it is now 10.54 as we leave.

At Carwarp we stop to set down the electrical fitter, and, at Hattah, the guard has to work the electric staff, and we stop with the van opposite the office. First he inserts the staff he has and gives the three bells of train arrival at Carwarp. After this is acknowledged, Carwarp asks for a staff for to-night's passenger train (three pause one), and this the guard acknowledges, holding down on the last beat to enable Carwarp to extract the staff. Similarly the guard asks for a staff from Ouyen, which is given to the fireman who walks back with it to the engine. All this our Guard records in the train Register Book, after which the office is locked, we rejoin the van and once more we are away.

The line south of Hattah cuts through an area of mallee scrub, perhaps eight feet high, whose dull greenness reaches as far as eye can see. On either side of the track between the fences the scrub has been removed, revealing the yellow sandy soil. As far as the horizon north and south stretches this yellow ribbon of railway across the dull green expanse and on which even the small timber platform and loop siding of Irinita is a welcome break in the monotony.

Ouyen is our next stop, at about 12.50, and here the Mildura guard is relieved. He and I adjourn to the Rest House for a welcome three-course meal. Back at the station, 903 has developed some undiagnosed internal trouble, and there is considerable activity with spanners, and, as a result, the train departure bells are not sent to Speed until 1.46.

The Mallee country, bad enough north of Ouyen, seems to get progressively worse. It is as they say, "flat as a board," and this is a stifling hot day. The Z van has been standing in the sun at Ouyen for almost an hour, and a minor sandstorm is blowing over from the west. Z vans may have been designed for a number of things, but they are certainly NOT sandproof, and shortly the sand trickles under the doors and windows, and piles up in little ridges in the most unexpected places, and sifts through my clothes and those of the guard. He takes off his collar and tie, his coat and vest, but is still busy sorting waybills of trucks picked up at Ouyen, and writing times in his Log Book and train running sheet. The writing and figures in these lists are remarkably legible, an excellent hand in view of his hunting, weaving escritoire. Once or twice he pauses for a question or a word, but it is not until we approach Speed that his clerical work is finished, and he takes a seat again in the cupola.

Speed is a typical staff station of Victoria's northwest — three roads, an extension or two, and an Up and a Down home signal. It bakes in the blazing sun. The white towers of the silo, the sandy soil, the surface of the rails, the ballast — none of these offer any relief to the eyes, and I wonder where my sun glasses are.

The Up home signal is off and we run through with scarcely a pause, and someone minus cap and coat stands on the platform to change the staffs. He brushes the flies from his face with the cane hoop, waves to the guard, and returns to the comparative coolness of his office.

We pass a gang of repairers working south of Gama — dusty looking, sunburnt types, most of them wearing industrial respirators for relief from the sand as the train speeds past. We see them from a distance, but by the time we pass them the sand blots them out in a swirling black cloud.

Between Lascelles and Woomelang, I call to the guard, "There's a bag of wheat just fallen from that 1B — third truck up." We watch it as it falls clear of the line, and he notes it on his train running statement.

Woomelang is another brief respite in the afternoon's run, and we come to stand at the platform at 3.12. The guard and I walk down to the 1B and there is obviously the gap where the bag fell out. Food is indicated, and I wander up the street for sandwiches and ice cream, and, after watching them take water, I climb aboard and we press forward again at 3.36.

Although, by this time, we are an hour behind our allotted path, the Down goods is nowhere to be seen at Curyo, where the Up home is off and we run through.

At Birchip, however, the home signal is on, and the errant Down goods can be seen in No. 2 road. The home stick comes off and we are turned into No. 3 past the hissing A2, No. 895, and come to a stand at 4.20. The Down afternoon passenger, a service operated by A.E.C. Railmotor No. 1, arrives at 4.25, and ten minutes later, after changing guards, the S.M. comes over with the peg and lets us out at the Up end.

Approaching Litchfield, the guard calls to me, "Smell it?" I can, too, the pungent smell of burning oil. "A hot box on one of those trucks of wheat," he says, "We'll have to stop here and set it out," and he reaches over and pulls the air. I hang on as the van shudders to a stop opposite the office. Although Litchfield is switched out, the porter is standing on the station, and he says to the guard, "About ten from the engine." I follow the guard up the train and we meet the fireman coming back. "Must have got a dose of sand beyond Woomelang," he says, and uncouples behind the smoking I 13205, and signals the engine forward. The porter has by now replaced the Down home and fireman drops off the buffer of the I to withdraw the plunger and hold over the main line points. The guard unlocks the rest and holds them over for No. 3. 903 backs up and the by now subdued flame on the truck is properly extinguished, and the truck detached. I walk back to the van and hear the porter calling Control "Litchfield," and waits, "Thirty-six in 5.27, stopped to detach I 13205. loaded wheat Yarrara to Williamstown Pier, account hot box."

After leaving Litchfield, twenty minutes sees us in Donald, where engines are changed and A2 No. 864 backs on. A quarter hour is long enough here.

By the time we reach St. Arnaud it is quite dark, and as we round the 45 chain curve towards the station, 864 is heard calling for the adverse home signal. After a pause, the brakes are released and, as the train rolls down past the green light of the home, another green — a hand lamp at the points — indicates that we are being turned into the crossing loop. The operating porter shuts and plungers the points behind the van, and walks up along the train to collect the staff. He disappears into the office, and we hear the Cope Cope staff bells.

Up the 1-in-50 soon comes the Down goods, the engine, C13, pounding past the van, turbo generator whining, the intermittent golden glare lighting the station up as the fireman swings coal in the open fire door. As she passes, the safety valve pops and drowns everything with that peculiar rasping noise. As the

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(Continued from page 4)

ling facilities at freight terminals, and fast freight train services six days a week were advocated. Poultry farmers particularly wanted more (and more modern) refrigerator cars and special cars for the transportation of live poultry, including day-old chickens. Live poultry shipped in crates, even in ventilated louvre cars, were often suffocated, or died of thirst, said Mr. Hurst.

THE VICTORIAN DECENTRALISATION LEAGUE is urging the construction of a connecting railway linking Patchewollock, Victoria, with Ouyen and thence to Hay, N.S.W., which would intersect and link six of the long "fingers" of the Victorian Railways in the northern districts and the Balranald line — a "Border Railway" in New South Wales.

sharp exhausts of the C are heard climbing the 1-in-50 out of the station, the operating porter comes out with the Emu staff, and shortly swings a green for us to leave.

At Dunolly, we are held at the home, while 31A, a Down goods, is turned into the loop. After the home is cleared, we rumble through the station, and notice the fireman standing at the front of the engine, A2971, whose left-hand marker, with its red light, intimates that it is clear of the fouling point.

Bet Bet—Havelock—Simson—Maryborough. The lights of the "village behind the station" appear round a curve; we drum past the loco shed, join the line from Castlemaine, cross through the gates at "B" Box, and come to a stand at 9.35. The guard leans out and calls to the signalman—"Four Avoca—One Castlemaine—the rest Ballarat and beyond," and the signalman waves the Dunolly staff in acknowledgment.

I thank the guard for the sandwiches at St. Arnaud, and make my way over the tracks and rods and wires to the platform, where the big clock reminds me that it is eight hours since last I ate properly. Steak and eggs seem indicated — and a bed.

After the form[illegible] and while searching for the latter, I can hear another engine on 36 fast goods toiling up the 1 in 48 towards Talbot, the sharp exhaust beats and the metallic click of wheel on rail coming clearly across the still night air.

TRAMWAY ALBUM

After many vicissitudes, our long-awaited Australian Tramway Album has at last reached the printers. It was hoped to post out copies ordered before Christmas as announced. A last-minute hitch has occurred in connection with binding, however, our bookbinders having stated that they will be unable to undertake the task before mid-January, owing to shortage of staff. We wish to apologise for this vexatious delay, and to assure readers who have ordered a copy that the books will be sent out as soon as possible.

The album will be on sale at 5/- per copy, and will be posted to any address in the British Empire (except Canada) for this amount. Subscribers in Canada, the U.S.A., and non-British countries should send one dollar (U.S.) or the equivalent.

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park. Addresses will be found on page one.

Further details of the "Westland" car illustrated in our December issue, which were not available at the time, are as follows:—1st class passenger car, class AH, No. 560, constructed at the W.A.G.R. Midland Junction shops.

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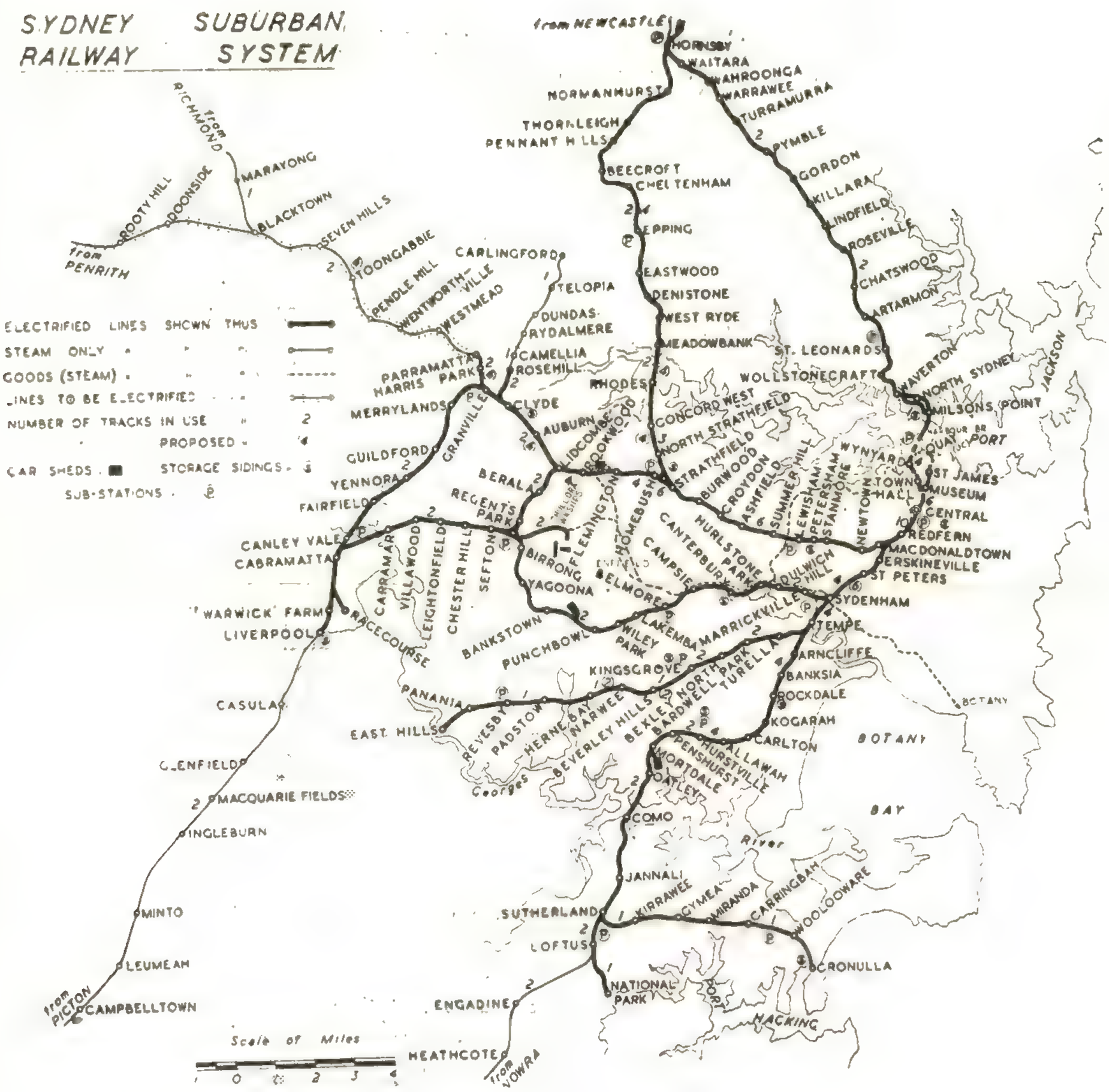

Specially drawn for "Tram Tracks," our Electric Traction monthly, by Mr. N. J. Thorpe, this diagram will assist readers to follow references to the suburban railways of Sydney, N.S.W. (Note that the electric line to Chullora Car Shops actually extends to the junction with the Enfield goods lines. Also omitted were a steam-operated branch from Liverpool to Anzac Rifle Range, and a sub-station at Gordon. Since the map was drawn, four tracks have been brought into use between Westmead and Seven Hills, and it has been announced that there will be five tracks to Concord West.)

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Railways in Australia
and
A.R.L.H.S. BULLETIN
The Magazine about Australian Trains

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RAILWAYS IN AUSTRALIA
Lifeline of Our Country

Sixteen years ago, Mr. McLeod Morgan penned these lines for the "Sydney Mail" (no longer published). The thoughts expressed are those for all true rail fans, and we have much pleasure in reprinting them, with the kind permission of the author.

RAILWAYS.—In Australia they receive more adverse criticism than praise; yet, I think, we have all felt the mysterious fascination of anything that is connected with the steel highway. The locomotive siren in the night, the "clickety clack" of a swaying line of coaches bound for an unknown destination, the imperative gong in the signal box, and the awe-inspiring monster belching clouds of smoke, have thrilled us from childhood, when our little toy train used to run around its small circle on the dining-room carpet.

Railways have helped to build Australia, and are her backbone today. There is the network of the eastern States and the twin, narrow strips of steel stretching into the west. Trains rush over them, carrying hundreds of heedless passengers; yet, what tales of the advance of an Empire lie behind those metal tracks and sleepers half buried in ballast of rock, winding through flinty gorges or disappearing as straight as an arrow into the shimmering heat haze of the sun-beaten plain's horizon.

Australia's railways are adding yearly to her storehouse of traditions. Service, under all conditions, must be the motto of any institution that would be great. The long, toiling train of starving stock, leaving behind miles of smouldering plain; the swift, louvred fruit train, headed by a passenger engine; the cautious ballast train slowly feeling its way through the receding flood waters — these, some of the less well-known and less picturesque sides of railway life, are making our land worth living in, just as much as the thundering express roaring through the night down the brilliant laneway made by its Cyclopean eye, or the steel electric trains burrowing beneath a city's nerve centre.

Masefield knew life on the deep was real, earnest, and hard; yet he could feel that there was something greater behind that life than mere every-day routine and matter-of-fact duties. It is the same with the steel highway. Who has stood — though frequently receiving a shower of soot and scorched at each opening of the fire-door — in the "hall of the mountain king," seen the regulator opened, felt the huge driving wheels grip the 1-in-33 gradient, heard the hoarse coughing in the boiler, the cheery, natural remarks of driver and fireman, and the sharp jangle of tautening couplings in the train behind, and has not been glad to be away from the world of convention and appearances amid the glamour of such an experience?

And so the railways carry on, through criticism or praise, silent toilers in the advance of our southern nation.

LATE PUBLICATION

Owing to a series of strikes, shortages, etc., followed by the Christmas and New Year holidays, it has been impossible to adhere to our regular publicatoin date. As we write, it is hoped to have this issue out on time and to remain on schedule in future, subject to freedom from industrial disputes.

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

STEADY PROGRESS REVEALED
N.S.W.R. Annual Report

"The annual report of the New South Wales Department of Railways for the year ended June 30, 1948, revealed record revenue of £36,905,862 had been earned—an increase of over £6½ million on the previous year—and a profit on operations (after providing for working expenses of £31 million) of £5,891,195. After meeting interest, exchange and sinking fund contributions, amounting to just over £5½ million, the surplus for the year under review was £111,585, as compared with a deficit of over £1½ million for the previous year.

Revenue earnings increased under all categories; the principal increases being almost £1½ million in passenger receipts and about £4½ million in freights. These increases were partially accounted for by increased charges which took effect from August, 1947. Total passenger journeys amounting to 263,046,815—an increase of almost 2 millions over the previous year—were the second greatest ever handled in peacetime, and only a little under 5 million less than the immediate post-war peak of almost 267½ millions in 1946. That year's total included vast troop movements resulting from demobilisation of the armed forces. Freight tonnage in 1947-8 increased by almost a million tons over 1946-7, to a total of 17,407,149 tons. Operating ratio (i.e., percentage of working expenses to earnings) which is the mirror of railway efficiency, was fractionally less, at 84.04 per cent. than in 1947.

On three specific occasions, and partially throughout the year, the Department was hampered by coal shortage, necessitating reduction of services and consequently of earning power. In addition, shortage of freight rolling stock was continuously acute, and certain classes of traffic were either banned, or restricted, as a result. For instance, from March 1, 1948, short haul freight traffic within a radius of 50 miles of Sydney has not been accepted for transit by rail, but even this and other restrictions has not prevented there being an average daily shortage of approximately 1,000 freight cars throughout the year.

Owing to lag in delivery of new equipment on order from Departmental shops and outside contractors, rolling stock orders placed, in some cases as long ago as August, 1942, are still largely unfulfilled. Steps are now being taken to obtain urgently-needed freight cars from overseas builders. Altogether 270 units of passenger rolling stock (of which 11 had been delivered by contractors) were on order at June 30 1948. At the same date a total of 12,122 units of freight rolling stock (including components such as underframes) were on order from private contractors, of which 3,386 had been delivered. Orders placed in the Departmental shops for passenger stock totalled 50 units, and for freight cars 6,337 (including components). No passenger units and only 2,585 freight units had been delivered by June 30, 1948.

During the year three serious accidents occurred to passenger trains, involving injuries to passengers in two instances and four deaths in one — the first fatal accident to train passengers on the New South Wales Railways in almost 22 years, during which time more than 4,100,000,000 passengers have been carried.

Passenger bookings at eight off-line agencies expanded considerably during the year, and three new agencies were opened — one in Sydney, and two in provincial centres. These agencies have decentralised the reservation of train accommodation and increased public convenience.

The first air-conditioned train set for the Newcastle Express service commenced operation on April 30, 1948. No extra fares are charged beyond normal seat reservation fees. (Since the close of the financial year week-end special excursion tickets have not been available for travel on Newcastle Express services.—Ed.) This equipment sets a new high standard in passenger train accommodation standards in this country.

Almost 56 million bushels of wheat were handled by rail during the year, of which 73 per cent. was handled in

"Trans" express of the Commonwealth Railways East-West transcontinental line. The loco. is a C-class 4—6—0. These machines were built to the designs of the New South Wales Railways C36-class, but the smoke deflectors, cow-catcher (pilot), and the exceptionally large tender help to conceal the likeness.

(Photo by Mal Park.)

bulk. Wheat transport was hampered by equipment and coal shortage and a large carry-over remains at country stations, and silos of last season's wheat harvest. Over a million bales of wool were hauled. The new Cook's River interstate freight station was opened for traffic on December 15, 1947. Total freight traffic handled through Darling Harbour Freight Terminal (Sydney) increased by 7.63 per cent. over the previous year.

Steam locomotives ran an aggregate of almost 34 million miles for a total ton mileage of 10,076,661,786, whilst the average load hauled per engine increased from 294 to 297 tons. Eight 38-class 4-6-2 passenger locomotives were placed in traffic ex-Departmental shops during the year. Steam locomotives ran an average of 48,738 miles per casualty, and 133,025 miles per failure. Sixteen 55-class freight locomotives were converted for oil-burning, and work was put in hand for the conversion of four more. Training of enginemen for operation of oil-burning locomotives was assisted by compilation of a comprehensive instruction manual.

Suburban electric trains ran almost 8½ million miles with commendable reliability and punctuality. Rail motors ran 1,207,246 miles and diesel trains 194,268 miles. Mileage of diesel-electric shunting locomotives decreased by over 12 per cent. owing to the Commonwealth Government taking over two of the four units employed during the year. Design of standard turret type locomotive tenders and top-bunker bogie refrigerator cars was completed, and 200 of the former and 50 of the latter have been ordered from contractors. Progress was made with design and material assembly for the production of a series of twenty-five 58-class three-cylinder 4-8-2 freight locomotives to follow the present 38-class building programme from Departmental shops.

A special 138-ton capacity 16-wheeled turbo-alternator transporter was constructed at Chullora Perway shops. New workshop machines and testing equipment were installed during the year.

The complete duplication between Cootamundra and Junee was brought into use together with the new locomotive roundhouse and terminal facilities at Junee, opened at a special ceremony on September 27, 1947. Progress was made with the sinking of reinforced concrete piers for the erection of the overhead station at Circular Quay. The work of duplication between Kingsgrove and Herne Bay (opened November 30, 1948.—Ed.), of the East Hills suburban line was undertaken, and work continued with the quadruplications between Lidcombe and Granville, and between Seven Hills and Blacktown. A commencement was made with the construction of a new bridge over the Parramatta River at Rhodes, and with the earthworks, culverts, etc., for the quadruplication between North Strathfield and Eastwood. Excavations for the provision of additional tracks between Temp- and Redfern in connection with the extension of the City Underground Railway were undertaken.

Planning and design of the Eastern Suburbs Underground Railway, and other eastern and south-eastern suburban railways was continued. Surveys of the route were made and trial bores were sunk at various localities to test the rock strata. Considerable progress was made with the strengthening and raising to main line standard of the cross-country line from Stockinbingal to Werris Creek, via Forbes and Narromine, and with other main line improvement works. Two new steel and concrete bridges were commenced and 66 timber bridges were replaced by steel and concrete structures. The major work of bridge replacement, curve easement and other track and siding improvements on the main Northern line to Newcastle was carried a stage further with the opening of refuge loop sidings at Tuggerah and Awaba. Progress with bridges and approaches at Woy Woy, Wallarah Creek, Ourimbah Creek, Dora Creek and Cockle Creek was continued and earthworks for the construction of refuge loops at Wyee, Morrisset and Sulphide Junction were completed. Five of the seven spans of the old Hawkesbury River Bridge were floated off their piers for dismantling. (All have subsequently been removed.—Ed.)

> "I tell you that I think you will live to see the day, though I may not live so long, when railways will come to supersede almost all other methods of conveyance in this country—when mail coaches will go by railway, and railroads will become the great highway for the King and his subjects. The time is coming when it will be cheaper for a workingman to travel upon a railway than to walk on foot. I know there are great and almost insurmountable difficulties that will have to be encountered; but what I have said will come to pass as sure as you live. I only wish I may live to see the day, though that I can scarcely hope for, as I know how slow all human progress is." — George Stephenson, 1821.

In the signalling and safeworking field, Miniature Electric Staff exchangers were provided at stations between Taree and Casino, on the North-coast line. Extension from Casino to Border Loop is in progress. A single-channel carrier telephone circuit was provided between Bathurst and Cowra, and a three-channel circuit between Newcastle and South Grafton. Teleprinters to be installed between Sydney and Lithgow were obtained from contractors and much telephone, telegraphic and signalling equipment was manufactured in Departmental signal shops. Improved and altered signalling was installed on the Northern line between Gosford and Newcastle, and on the Southern line between Liverpool and Mittagong. A commencement was made with the provision of electric relay interlocking in the new modern brick signal-boxes at Auburn, Clyde and Granville, and, with extension of the electric interlocking at Lidcombe in preparation for the quadruplication already referred to. Concurrently with the opening of the Herne Bay duplication, automatic signalling with extended from Kingsgrove to Herne Bay, and single line track block between Herne Bay and East Hills.

During the year the general storehouse was transferred to new premises at Rozelle, Sydney, from the old quarters at Newtown. The new storehouse is a modern structure taken over from the Services, and stores handling is completely palletised with travelling floor cranes and fork lift trucks for rapid materials handling. During the year a rail flaw detector car equipped with magnetic and super-sonic detectors was designed and built by the Department. In testing 442 miles of main line track, 24 hidden rail fissures were detected and the defective rails replaced. Four additional units are being built. It is intended to regularly inspect all main line tracks at frequent intervals, and all secondary and branch lines from once each six months to once a year. (In this connection it is interesting to recall that, at the coronial inquest upon the four persons who lost their lives in the derailment of the south-bound South-West Mail near Rocky Ponds on June 30, 1948, the Chief Civil Engineer (Mr. Fewtrell) said in evidence that the Up line in the vicinity had been tested, and that the Down line would have been similarly covered within a matter of days. This fatal accident, marring the 22 years' old safety record of the N.S.W.R. might thus have been prevented.—Ed.)

During the past winter successful trials were made with steam heating equipment on the Southern Highlands Express operating between Sydney and Goulburn. This is the first time steam heating has been applied to a passenger train in Australia. Additional equipment for fitting to more car sets has been ordered, and fitting of steam heating connections to locomotives and tenders has been undertaken.

Some further progress was made with completion of earthworks, fencing and tunnelling on the new Sandy Hollow-Maryvale line. The shortage of materials, particularly of rails, is likely to delay the completion of this line for several years. Strengthening of the line between Sandy Hollaw and Muswellbrook was continued.

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DEVIATION TO REPLACE MT. MORGAN RACK RAILWAY.—The Queensland Government has approved a project which will cost £400,000, to eliminate the famous Mount Morgan rack railway, by means of a deviation of the branch line serving the Callide and Dawson River Valleys. The complete scheme provides for regrading between Kabra and Moongan, a deviation between Moongan and Moonmera (at present worked by special rack locomotives on the Abt system). and improvement to the Moongan-Biloela section, by provision of extra sleepers and ballast and improved drainage, etc. This work has been made necessary by the development of the Callide coalfield, the output from which has already grown beyond the capacity of the existing railway. With the elimination of the rack section, the special D-13½ class 0-6-0 Tank type rack engines will be scrapped. Earthworks for the regrading and deviation will be left on contract. Completion of this project will substantially increase the capacity of the line by raising the maximum single engine ruling grade load to 275 tons, as compared with the present limit of 125 tons (with two engines) up the existing rack section. Similarly, the down grade load will be increased from the present limit of 182 tons (with two engines) to 650 tons single engine load for a standard C-17 class 4-8-0. Possible development of pyrites production at Mount Morgan is another factor influencing this modernisation programme.

FIFTY MIKADOS NOT WANTED —There is interested speculation in railway circles, particularly in New South Wales, as to the ultimate fate of the fifty large 2-8-2 freight locomotives being built by Clyde Engineering Co., Granville, and originally ordered by UNRRA for service in China. Commonwealth transport officials are hopeful that some, at least, of these modern machines may be suitably modified for service on the New South Wales Railways. (It will be recalled that it was intended to test the first locomotive completed between Sydney and Picton.—Ed.) Basically similar to existing S.A.R. 710-class, these engines develop a tractive effort of 40,400 lb. Their total roadworthy weight is 176 tons, with a maximum axle loading of 18½ tons, which make them suitable for main line operation, at least, on the N.S.W.R. system. Major difficulty to be overcome would be reduction of maximum width (10 ft. 4 in. over cabs and steam chests) to the limits imposed by the Australian Standard loading gauge which obtains in New South Wales, and conversion from right-hand to left-hand control. The only other Australian system that would be able to make use of a small number of these large locomotives might be the Commonwealth's own Trans-Australian line. It would be uneconomical to store them pending standardisation, but they should find a ready market overseas.

QUEENSLAND CHANGING TO ALL-STEEL CONSTRUCTION. — Both during and since World War II, transportation experts in Australia and abroad have frequently expressed amazement, linked with high praise, of the Queensland Railways phenomenal achievement in handling the huge volume of freight and passengers during the Pacific War, on a single track system of such limited capacity and equipment. This achievement was made possible by careful planning, employee co-operation and the relentless utilisation of both locomotives and rolling stock to the very limit of capacity and safety. The result is that rolling stock and locomotives are to-day both inadequate to cope with the increasing demand for efficient railway transportation which has resulted from peace time industrial expansion. The demands made on the Queensland Railways during the war were responsible, more than any other factor, for the marked deterioration in the condition and serviceability of locomotives, passenger and freight cars. This deterioration has been accelerated because much of the rolling stock was, and still is, beyond its economic age limit. At June 30, 1948, there were 322 (41.9 per cent. of strength) of locomotives over thirty and up to forty years old; 51 (6.6 per cent.), over forty and up to fifty years old; and 39 (5 per cent.) over fifty years old, still in service. Thus a total of 412 engines, representing 53.3 per cent. of the total stock at that date were economically "over age." (The age beyond which it is reckoned as uneconomical to maintain a steam locomotive in service is generally assessed as 30 years. There are, however, notable exceptions, particularly in this country.—Ed.) The passenger car stock consisted of 1,188 vehicles, of which 32.7 per cent. were over thirty years old, and a very large proportion of the remainder was over the age of 40 years considered economic for wooden passenger cars. The latest figures for freight rolling stock date from June, 1945, when 3,156 units (or 15.1 per cent. of the total) was over 40 years old and up to fifty, which is considered beyond the extreme economic age limit for predominently wooden freight cars. As a result of the war-time depletion of native timber resources, and the more urgent demands for housing, etc., Queensland Railways are unable any longer to obtain their timber requirements for rolling stock construction. Accordingly, all new freight car construction, and probably most future passenger car construction, will be all-steel to facilitate construction and future maintenance.

NEWS IN BRIEF.

WEST AUSTRALIA.—The W.A. Railways Publicity Committee has recently issued two new publications of interest. One is a leaflet headed by an illustration of the "Australind," detailing railway and connecting railway road service timetables in the South-western district of the State. A handy route map showing railways and railway-operated bus routes in the areas adjacent to and south of Perth is included. The other publication consists of two printed sheets illustrating the principal classes of steamlocomotives in service, together with relevant dimensions of each, numbers in service, etc. Printed on art paper, these locomotive data sheets are available on application from the secretary, Railways Publicity Committee, Perth.

QUEENSLAND.—Engine No. 949, first of the new 4-6-4 suburban tank locomotives designated class DD-17, was outshopped by Ipswich shops on December 16, 1948. This first of twelve similar machines on order, was tested on local freight trains, and entered suburban passenger service in time for the Christmas traffic. The second engine of the class is scheduled for delivery by early April, and thereafter one should be completed each month. No. 959, the first of twenty standard C-17 class engines on order from Clyde Engineering Co., Granville, N.S.W., was delivered in December last. This engine, which carries the builder's number 494, is the first locomotive ever built in another Australian State for the Queensland Railways, reports Mr. Ken Rogers, our Brisbane correspondent. No. 959 is working in the Brisbane district.

NEW SOUTH WALES.—The first of twenty new two-car diesel rail motors for country branch line operation, built in the Chullora Rolling Stock shops, was tested between Sydney and Hawkesbury River on December 22, 1948. These units have two 165 b.h.p. diesel engines which drive each bogie through epicyclic gearboxes with electro-pneumatic control. Each unit seats 28 first-class and 56 second-class passengers, and has space for freight and luggage in the guard's compartment. General appearance is somewhat similar to that of the 400-type petrol rail motor units. The maximum designed speed of 60 m.p.h. was reached during the test runs. Owing to the Department's inability to obtain sufficient new heavy rails, 35, 36 and 38-class engines have been restricted from working on the North Coast line north from West Maitland. Brisbane Express, mail and passenger trains will be worked by the ubiquitous 32-class, double-heading when necessary. Many Western mail and passenger trains are now being regularly worked by 38-class engines which are permitted to run to Dubbo, via Wellington.

(Continued on page 20)

THE WAITING ROOM—

Letters to the Editor

The Editor,
Railways in Australia.
Dear Sir,

The editorials to which exception has been taken in some quarters seem to have been generally misunderstood as playing railway politics. Your advocacy of moderization of Australian railway systems is a technical and practical question which cannot be more suitably ventilated than in a magazine of this character.

The continued existence of the railroads depends on the extent to which they are developed into efficient high-capacity transportation agencies able to meet extraordinary demands upon them in the manner in which the U.S. railroads rose to the occasion during World War II. This they will be unable to do if they continue to purchase low-capacity, outmoded types of freight cars and new locomotives which have merely modifications of designs built twenty and thirty years ago, before the comparative revolution in motive power design which has been a feature of the past ten to fifteen years in Europe and North America.

All who have the best interests of the railroads of this Commonwealth at heart will hope to see a resumption of editorials which will combine with wisdom and tolerance to advocate the vital matter of Australian railroad rehabilitation so necessary to our economic advancement.
—Yours, etc.,

RONALD E. MURRAY.

Ryde, N.S.W.

The Editor,
Railways in Australia.
Dear Sir,

Having unwittingly been the prime cause of all the correspondence for and against "railway politics," I should like to have the last word! Firstly, it should be as clear to all who take an intelligent interest in Australian railways (as it certainly is to most of their administrators) that Australian railways in general are largely obsolete; in construction, equipment and operation. To argue otherwise is to ignore developments in almost every civilised country. I substantially agree with Mr. J. Y. Harvey's view that we enthusiasts should not try to teach railwaymen their jobs, but to learn from them, as many of us have. But bear in mind that all progress demands changes, in greater or lesser extent. It is a common human failing to resist any change that upsets precedent or established routine. So it is with railways and railwaymen the world over. What was "good enough for grandfather in 1886" is NOT good enough to-day.

Your correspondent hiding behind the nom-de-plume "E.S." might at least have the courage to identify himself with his rather curious and puritanical views regarding criticism and comment on certain aspects of railway undertakings in this country. Perhaps his "fear of reprisals" is the reason he resorts to a nom-de-plume? Your South Australian correspondent, on the other hands, adopts the broader and more tolerant view. Perhaps there is some significance in that almost all the "malcontents" have addresses in Victoria!—Yours, etc.,

JOHN L. BUCKLAND.

South Melbourne, Vic.

The Editor,
Railways in Australia.
Dear Sir,

In reply to your request for opinions on your editorial policy as per the November, 1948, issue, it is my opinion that they should continue, as "Railways in Australia" is the only journal in this country to publish such opinion regularly. Therefore they are the great white hope of those of us who believe that the best possible way to have our railways modernised and therefore put in a fairer position against the 'buses and airlines is through stirring the politicians, if that is indeed possible. With best wishes for the future.—Yours, etc.,

WILLIAM BYRNE.

Melbourne, Vic.

The Editor,
Railways in Australia.
Dear Sir,

I would like to congratulate you on your magazine. I am a very keen railway fan in many ways, and am always in search of facts, figures, photos, or anything pertaining to the cult of the spinning wheels, and I am afraid I cannot fault your magazine in any way. You have enough engine pictures to suit even my insatiable thirst, and I think your articles are very well written.

I was a railway fireman myself at one time, until ill health finished my term on the footplate; but, although I have been off the footplate for three years now, the steam has not left my veins even yet. Please keep up the good work for as long as possible and you can be sure of at least one permanent reader for as long as your magazine comes off the presses.—Yours, etc.,

TOM COX.

Auburn, Vic.

(Thanks for the compliments, Mr. Cox; most of the praise is due to the indefatigable editor of the Bulletin section. We'll cost is the big snag, as with many other things we'd like to do. Always glad to hear from railwaymen, past or present.)

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post in due course; please enclose a stamped, addressed envelope.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

The VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at the Model Dockyard, 216 Swanston Street, MELBOURNE; visitors welcome.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Region) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

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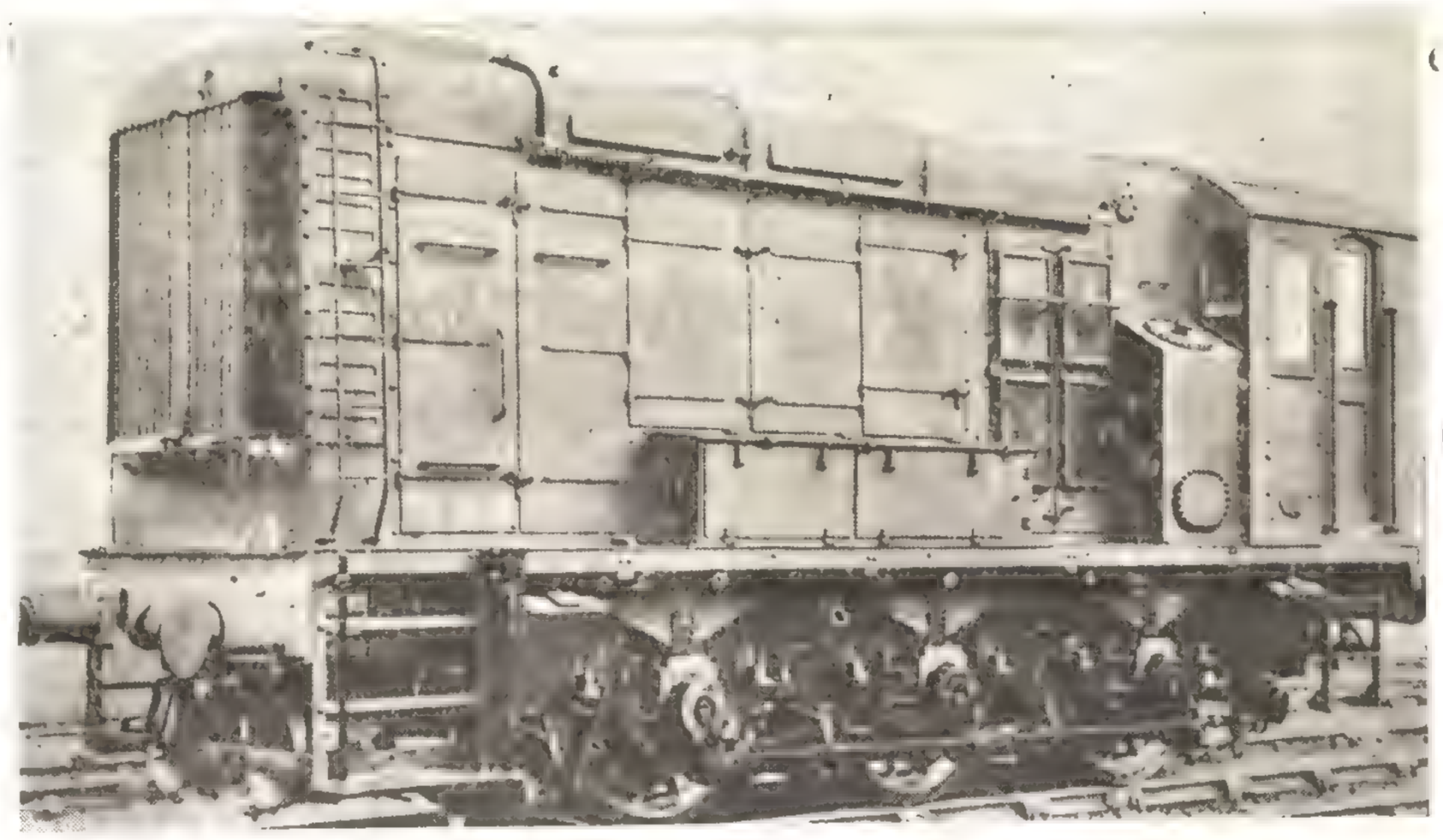
Engine Pictures

K-class 2—8—0 freight locomotive of the Commonwealth Railways standard-gauge East-West line. These machines were built to NSWR designs—(compare with the Belgian locos. illustrated in our December issue)—but like the C-class shown on page 1, have acquired distinctive characteristics of their own. The stove pipe stack and the high-sided tender are particularly obvious. Note the auxiliary water tank hauled behind the tender for long desert stretches.

(Photo by Mal Park.)

Diesel-electric locomotives are very much in the news these days. This photograph shows an 0—6—0 coupled shunting loco. of the type ordered by the Victorian Railways. Capable of moving a 1000-ton load on the level, these 350 h.p. machines have a starting tractive effort of 33,000 lb.; 675 gallons of fuel oil carried will keep the 6-cylinder diesel prime mover running for 350 hours. Maximum speed is 20 m.p.h. Other particulars are:—Weight, roadworthy, 48 tons; length over buffers, 30 ft.; height, 12 ft. 6 in. They can be driven from either side of the cab. Ten of these machines are on order and are to be delivered at the rate of two per month, in two years' time.

(Block kindly lent by Victorian Railways.)



Question Box

Questions on any aspect of railway operations, past or present, in Australia, may be sent to this journal. Mark the envelope distinctly "Question Box." If we don't know the answer, we'll endeavour to find out, and, if all else fails we'll print your question and leave it to our readers. (It is regretted that direct answers cannot be posted to correspondents).

Reader R. Christie, Collaroy, N.S.W., writes:—

On the N.S.W. Railways, passenger rolling stock is marked with 2 or 3 letters and I would like to know if they are abbreviations and, if not, can you tell me the various letters and the type of carriage they designate? To explain my meaning, here is one which I know:—TAM—Standard Sleeper.

At the same time, can you tell me if they are wood or steel construction?

ANSWER:

This subject could well occupy a page of this journal and it is hoped to prepare an article in due course. Basically, the first letter of 2-letter classifications indicates the class of accommodation, e.g., B—1st class, F—2nd class, A—special car (includes sleepers and diners), H—brake. The second letter indicates the design and is quite arbitrary, e.g., BR—1st class side-corridor light main-line car. Originally X indicated main line stock, e.g., FX—2nd class main line car. In 3-letter classifications, the first letter is a designator, such as T—"through" type, e.g., TFX—2nd class main line car for "through" (interstate) service.

TAM cars are of wooden construction on steel underframes. Old cars are mostly all-wood. Modern cars are all-steel.

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

Reader R. B. McMillan snapped Victorian Railways 4-6-0, class A1, No. 812, leaving North Melbourne with a down goods for Nyora, on 12/8/48. Note the 600-class engines fitted with hoops overhead for the suburban electric freight services.

STOP PRESS.—Victorian Railways H-class 4-8-4 No. 220 is to have a number of modifications, including provision of a boiler-mounted sandbox (located between steam dryer and throttle housing domes) in place of the present between the frames sandboxes. Air-sanding will be applied to the front of the leading and second pair of driving wheels and probably to the rear of the second pair of wheels for tender first operation. (The present arrangement delivers sand only to the front of the second pair of wheels.—Ed.) Concurrently, the whole of the boiler mountings in the vicinity of the dome area will be enclosed in one large streamlined casing. Alterations will be made to the stoker conveyor screw and the tender bunker to permit brown coal briquettes to be substituted for black coal. Alterations will be necessary to the grate and front end to enable briquettes to be satisfactorily and safely (from the spark ejection angle) burned. (In 1925 engine 110, class N, was experimentally fitted for burning briquettes fired by hand, but the results were inconclusive. —Ed.)

Tails of the Rails

Contributions under this heading are invited from our readers. Tales may be humorous or otherwise, and should describe some incident or incidents on an Australian railway. Events overseas, however interesting, are not desired at present. Write clearly, of course, and on one side of the paper.

Mr. A. D. Lockyer, Barmera, S.A., sends the following contribution:—

The following tale, told to me by an ex-Army mate who is now a fireman on the S.A.R., should, I think, prove suitable for your "Tales of the Rails" section:—

Recently a class of student firemen, including my friend, were attending a lecture in the Railways Institute, when the instructor asked: "What happens when the Guard gives the right away?" Up shot one solitary hand, the instructor beamed and said, "Well?" Quick as a flash came the answer: "Everyone sits down, and the Fireman stands up!" My friend went on to add that, by the time the laughter had subsided and the class had once more settled down to business, it was time to knock off.

ROLLING STOCK PARADE

Standard electric motor, New South Wales Railways, Sydney suburban lines: 62 ft. 8 in. long, these cars are powered by two 360 h.p. motors, and operate in sets of four or eight cars, half of which are trailers. NSWR electric stock has the exceptional width (for Australia) of 10 ft. 6 in. (NSWR Official photo.)

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(Continued from page 4)

SOUTH AUSTRALIA.—An agreement between the S.A. Government and Waratah Gypsum Pty. Ltd., has been negotiated whereby the company plans to establish plaster mills and a jetty equipped for mechanised loading at Thevenard, on the far west coast, at a cost of £500,000. Included in the plan is the construction of a 5½ mile spur railway from Kowalka (on the Penong line) to the gypsum deposits, and the agreement provides for the raw material to be railed over the S.A.R. for a distance of 36 miles to Thevenard. Approval has been given for the construction of an additional eight 520-class 4-8-4 dual service locomotives. Unlike existing units, they will have smaller eight-wheel tenders. Two diesel-electric B + B type shunting locomotives are being assembled at Islington shops. A series of freight brake vans of new design have recently been constructed. They are steel bogie vehicles without passenger accommodation, and feature roof periscope lookouts in place of the conventional guard's observation cupola. The vans are electrically lit and carry serial numbers without letter classification.

TASMANIA. — The six former S.A.R. Yx-class 2-6-0 locomotives purchased from the Commonwealth Railways were delivered to the Tasmanian Government Railways in Hobart during November last. After reassembly and modification of the draft gear at Launceston shops, they will be designated class F. The four Vulcan diesel-mechanical 0-6-0 shunting locomotives have been designated class V. The third and fourth units (Vulcan Nos. 2229 and 2230) were unloaded at Burnie and Hobart, respectively, in November and December. V No. 1 has been allotted to Hobart and V Nos. 2 and 4 are shunting at Launceston. The first of the orders for CC-class bogie gondolas have been delivered from Perry Engineering Co., Adelaide, and A. E. Goodwin Ltd., Sydney. A contractor is assembling CCC-type gondolas at Launceston roundhouse. Launceston shops are currently outshopping a new series of KG flat cars.

VICTORIA.—The Victorian Parliament last session passed a Bill authorising construction of a new suburban electric railway, 4½ miles long, from Alphington (on the Heidelberg line) to the vicinity of Broadway, East Preston, serving the new Housing Commission estate. Six stations are planned; two with freight sidings. Level crossings will be eliminated by under- and over-passes. The branch will be single track for 2¾ miles of its length. Construction is unlikely to be undertaken before more urgent works, such as the Gippsland duplication, are completed. The section of the Heidelberg line duplication from Ivanhoe to Heidelberg (1¼ miles) will be brought into use by June next. Lack of steel bridge girders has delayed the rest of the work; particularly the reconstruction of the viaduct over Darebin Creek, near Alphington. Mr. A. G. Fletcher, aged 60, formerly Chief Civil Engineer since 1938, was appointed a Railways Commissioner to succeed Mr. M. J. Canny, who retired on December 31, 1948, aged 66. Mr. Fletcher joined the V.R. as an engineer in 1913, and has held important posts of District Engineer, District Superintendent and Assistant General Superintendent of Transportation. He served in World War I. In 1947 he represented transport employers at the inland-transport conference of the I.L.O. at Geneva, after which he inspected railway undertakings in Europe and Britain. Mr. A. P. Taylor, formerly Assistant C.C.E., succeeds Mr. Fletcher. In a report to the Minister for Transport on Geelong city transport, Mr. H. H. Bell, Jnr., permanent way engineer of the Melbourne Tramways Board, recommends the operation of a suburban railway service between South Geelong and North Shore, and the replacement of the present electric tramway system by an enlarged route mileage of diesel bus services. The report has been submitted to Geelong civic authorities for comment. The State Electricity Commission (which controls provincial electric tramways in Geelong, Ballarat and Bendigo) and the Victorian Railways Department have been asked for their views.

CLYDE TO COMPLETE V.R. LOCO CONSTRUCTION. — The twenty N-class light 2-8-2 freight locomotives to be built by Clyde Engineering for the Victorian Railways will comprise portion of an order for a similar number started at Newport shops, but uncompleted owing to manpower and materials shortage and arrears of maintenance. A number of completed boilers, machined main frames, and other components will shortly be shipped to Clyde for assembly and completion of the contract. Boxpok driving wheel centres which were purchased for incorporation in these locomotives may also be included. (N-class engines on order from North British Locomotive Co. will have a new type of V.R.-designed spoked driving wheel, incorporating a U-section spoke of great strength in proportion to weight.—Ed.)

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SOME THOUGHTS ON AUSTRALIAN STANDARD GAUGE
By J.B.G.

Gauge standardisation is always a live topic, and in this article the writer (who was a senior military officer during the late war) contributes some whimsical but nonetheless practical thoughts on the subject from a new angle.

For almost as long as even elderly folks can remember, way back to the days when the classic phrase of "the lines will never meet" was coined in New South Wales, the question of a uniform railway gauge in Australia has been a contentious matter. It has occupied the minds of thinking men who forever awaited the solution which appeared to be just around the corner. Schemes have been raised, discussed and subsequently shelved, time and time again, and every postponement has added a few millions to the cost of the project.

It took the second World War to bring home to Australia the real meaning of "Uniform Gauge," and, but for the grace of Allah, the learning of the lesson could well have meant the extinction of this country as a Nation.

Despite the cry of the pessimists that the days of the Railway are over — and they have some justification in Australia, goodness knows — it is still a fact that a well-built and efficient Railway remains the best method of moving large quantities of heavy material at high speed between given points, and a modern Railway System is just as necessary for a country's defence as are its armed forces.

In the period between the "Munich Crisis" and the war (1938-1939), a certain Military Officer, when sitting for an examination, was set the task to prepare movement tables to take the 00th Division from a point "A" in Victoria to a point "B" in West Australia by Railway in the shortest possible time. The Officer — a mere civilian in uniform — happened to know some of the elementary rules of Railway Operation, and was conversant with the quantities of rolling stock available in the various systems to be traversed, and the answer to the problem was that seven months would have elapsed between the starting of the first train from point "A" to the arrival of the last Batman and Regimental Utility of the 00th Division at Point "B." The examining Staff Officers received a severe jolt because the answer definitely was not to be found in the little red books.

It is reasonable to assume that, when a National Emergency arises, we can say to our Railways — "Divert every engine and every car and truck to the job" — and it will be done, but what use would the effort be if trains banked up at some change of gauge station or junction, and could not be cleared? Chaos only could result.

It would be interesting to know just what the failure to standardise the gauge cost Australia in the recent war years. Think of the transfer stations specially built at Wodonga, Clapham, Broken Hill, Terowie, Wallan-Garra, and many others; the immense transhipment and handling costs at every break of gauge station. It is safe to assert that the costs involved would have partly paid for the conversion several times over.

Some idea of the war traffic passing through the State of South Australia may be of interest, especially when it is remembered that most of the traffic over these lines originated from outside the system, and thus involved at least one, and sometimes, two, changes of gauge within the State. The following figures represent the peak year, and the figures for 1939 are added for comparison purposes:—

SOUTH AUSTRALIAN RAILWAYS

	Loco. Miles	Vehicle Miles	Gross Ton Miles
1939	5,679,852	67,134,018	1,749,217,888
1944	7,707,829	86,773,066	2,456,182,367
COMMONWEALTH (EAST-WEST) LINE			
1939	738,836	9,123,071	257,359,493
1944	1,602,049	23,761,815	565,787,155
COMMONWEALTH (NORTH-SOUTH) LINE			
1939	355,300	6,042,035	87,596,314
1944	2,118,641	46,611,206	595,520,409

(Continued on page 19)

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

EQUIPMENT SHORTAGE, MAINTENANCE LAG HAMPER W.A.G.R.

In common with all Australian railways, the Western Australian Government system is faring badly in the face of locomotive and rolling stock shortage, arrears of maintenance and steeply-rising costs, which have raised working expenditure out of all proportion to current earnings. The Annual Report for the year ended June 30, 1948, revealed total revenue at £4,598,896 to be £552,961 greater than that earned the previous year, whilst working expenses for the same period rose by £1,146,199 to total £5,570,000, making the deficit on operations £971,104 for the year. Interest charges on capital indebtedness added £1,046,333, making the total deficit for the year £2,017,437. Operating ratio increased by 11.78 per cent. to 121.12 for the year under review.

Train traffic miles increased by over half a million miles to a total of 7,266,209 for the year, and passenger journeys by almost 166,000 to 14,044,299. Total tonnage of freight and livestock amounted to 3,402,806 tons, an increase of 334,000 tons over the previous year, but fractionally less than the 1945 tonnage. Gross ton mileage increased by over 50 millions to a record total of almost 416 millions. Average mileage each ton of freight hauled increased slightly to 145.57 miles. Average freight and livestock revenue per ton mile was 1.77d.

Taking the year 1937-38 as the base year, costs of wages, stores, materials and staff concessions such as penalty rates, etc., have risen by £2,736,000, without any corresponding increase in earning capacity by way of increased freight rates and fares. Thus the heavy deficit has arisen almost wholly from considerations outside the control of the Commissioner, Mr. J. A. Ellis, who comments as follows:

"On many occasions and practically continuously since 1942, I have recommended (to the Government) that railway charges be increased to a level more commensurate with the cost of the service rendered. . . . Last year our average earnings from freight traffic were 1.77d. per ton mile. Costs, however, were in the region of 2.99d. per ton mile."

The Commissioner recommends all-round increased charges of not less than 33 1/3 per cent. as the minimum necessary to put the undertaking on a paying basis. As from September 1, 1948, however, a "tapered increase" in freights and fares to produce an additional 20 per cent. gross revenue, or approximately £900,000, was authorised, but this will scarcely meet rising costs.

Reference is made to the findings of the recent Royal Commission into the working and management of the W.A.G.R. It is significant that the Commission found that the **root cause of the present difficulties of the railways is due to the prolonged and severe economy practised by Governments in the past.** Whilst in the case of other Government Departments, it is possible that no very great harm resulted, **the position is entirely different with a business undertaking such as the railways, which cannot remain static.** The Royal Commission also strongly recommended the separation of railway funds from State Consolidated Revenue, and establishment of a Renewals Fund (on an actuarial basis) for the purpose of improving and maintaining the railways **at a proper level of efficiency.**

Of the total locomotive stock of 422 on the register at June 30, 1948, only 17.5 per cent. was under ten years old; 5.4 per cent. between 11-20 years old; 8.8 per cent. from 21-30 years old; 25.4 per cent. from 31-40 years old; 23.5 per cent. from 41-50, and 19.4 per cent. over fifty years old. As only 35 new units (or 8.28 per cent.) have been added to stock since the end of the war, the strain imposed during the war years was all the more pronounced, due to the preponderance of "over-age" locomotives in service.

During the year under review only five S-class heavy 4-8-2 freight locomotives were completed in Departmental shops, owing to the vital necessity to devote the greater part of the workshop capacity to repair of existing plant. Repair schedules and costing are being reorganised to increase output of engine repairs. Materials have been ordered for construction of an additional 20 DD-class 4-6-4 suburban tank locomotives, whilst orders have been placed overseas for 25 (since increased to 35.—Ed.) PR-class standard Pacifics and 30 W-class light line 4-8-2's of a new design. The first Pacifics are due for delivery by the end of 1949, and the first 4-8-2's by the end of 1950. At June 30, 1948, 279 locomotives were in working order and 143 were off traffic undergoing, or awaiting, repair.

Both ends of diesel-electric railcars have been painted with black and yellow diagonal stripes to make them more conspicuous approaching level crossings. To meet the freight rolling stock shortage, sub-contracts were let to private firms for the construction of freight cars and components and 241 GE type (4-wheel open 10-ton); 100 CXA type 4-wheel sheep cars) and 47 RB type (bogie steel high-sided 27½-ton open cars) were received from this source. Orders in hand at the end of the year included 409 GE type, underframes for 100 CXA and 30 VB (bogie louvre cars) from outside contractors, and 20 DA 4-wheel louvre cars and the superstructure for 30 VB and 100 CXA cars in the Departmental shops. Eight 5,000-gallon capacity tank cars were constructed by mounting secondhand cylindrical tanks bought from the R.A.A.F. on bogie underframes. These cars are classed JG.

Thirteen locomotives were fitted with electric lighting, making a total of 309 units so equipped. A total of 36 new and replacement boilers were constructed during the year. Replacement of the original copper tube plates in U-class boilers with steel was undertaken. This work was found necessary to keep the steel tubes tight. Locomotives equipped with steel fireboxes continue to give excellent service with reduced maintenance. Some all-steel boilers on PR-class engines have accrued mileages of up to 400,000 without general overhaul. All new open freight cars issued to traffic are being fitted with ridgepoles for tarpaulin sheet support.

Reorganisation of the workshops at Midland Junction was continued, but shortage of building materials is holding up half-completed extensions. A new system of production control was introduced in the workshops, together with up-to-date costing on a standardised basis in May, 1948, and has already proved of great value.

Reballasting of 81 miles of the Eastern Goldfields line between Merriden and Kalgoorlie was undertaken. This gravel ballast, obtained from a site near Yellowdine, is designed to form a satisfactory base for metal ballast should the 4ft. 8½in. gauge be extended west from Kalgoorlie. Numerous other track works were carried out, including alterations and extensions to sidings, crossing loops and provision of triangles and longer turntables for turning A.S.G. locomotives.

The total capital indebtedness at June 30, 1948, was £27,583,697, and the system employed an average staff of 10,203 throughout the year.

FREIGHT CAR WASTAGE EXCEEDS REPLACEMENT IN N.S.W.

New freight cars delivered to the New South Wales Railways last year were insufficient to make up for normal losses and condemnations of old vehicles for scrapping, the Commissioner for Railways (Mr. F. C. Garside) recently told Newcastle Chamber of Commerce. "We are still trying to get a quart out of a pint pot," he said. Despite record numbers of freight cars on order, the Department was unable to get steel allocations sufficient to meet its requirements, and contractors with whom orders for rolling stock have been placed for as long as six years, were in the same position. The virtual shut-down of industry at week-ends since the introduction of the 40-hour week has intensified the problem, since freight cars often remain unloaded (or waiting to be unloaded) for up to 48 hours. In an effort to clear freight cars at terminals, the Department is paying time-and-a-half on Saturdays and double-time penalty rates to employees on Sundays to enable up to 820 cars to be released in time to be back in the country for loading on Mondays. Car repair shops were also working all day on Saturdays. Demurrage charges had to be made if cars were to remain idle over the week-end. From January 8, double demurrage has been imposed for certain classes of cars in an endeavour to compel consignees to unload and consignors to load on Saturdays. The cars concerned are those bearing special class (merchandise) traffic which are placed for delivery or loading by 8 a.m. on Saturdays and are not released on that day. Double demurrage amounts to £2/12/- per four-wheel car and £5/4/- per bogie car for each day, or part of a day.

Early completion of the Sandy Hollow-Maryvale railway was contingent upon the delivery of rails and rail fastenings. The shortage of steel rails of main line standard (107 lb.) for the New South Wales Railways is acute. Barely sufficient rails are available to maintain existing heavy-rail main line sections, let alone extend their use. The Department has sought Government approval to import rails from Belgium at £48 per ton compared with £16/10/- per ton charged by the B.H.P. Co. Unused sidings and the 14-mile branch from Booyong to Ballina on the far North Coast have been recently closed and the rails salvaged for use elsewhere, according to the Commissioner.

"A lag of nine years existed as far as rail replacement was concerned. Plans for many colliery sidings and connections in the North and West could not be implemented because of the shortage of rails. Because of the deterioration of the North Coast line necessitating restriction of operation of 35, 36 and 38-class engines, it was likely that the ten 1,600 b.h.p. diesel-electric locomotives on order from English Electric Co. would be used to operate the Brisbane expresses," Mr. Garside added.

W.A.G.R. LOCOMOTIVE ORDERS:

In addition to thirty light line 4-8-2 mixed traffic locomotives of a new design (to be designated W-class) on order from Beyer, Peacock & Co., the Western Australian Railways have increased their order by ten (from 25 to 35) for standard PR-class Pacifics which the North British Locomotive Company is fulfilling. The first locomotives are scheduled for delivery towards the end of 1949. It was originally intended to construct ten Pacifics of a new design (class V) in the Department's Midland Junction shops, but arrears of maintenance and material shortage have prevented this.

VIC. GOVERNMENT PLANS TRANSPORT RATIONALISATION:

Establishment of a single Ministry of Transport to effectively co-ordinate, control and rationalise transportation by rail, road and air, is planned by the Victorian Government, which anticipates presenting legislation to achieve this at the current session of Parliament. To advise the Government on policy with regard to development of the Victorian Railways, the British Transport Commission's Railway Executive has made the services of Mr. John Elliott, an executive of British Railways Southern Region, available for three months from March 1. Mr. Elliott will report on reorganisation and modernisation of the Victorian Railways, with particular emphasis on the future development of the Melbourne electrified suburban system and electric multiple-unit rolling stock design. Included in the proposed legislation is provision for separation of railways finances from State consolidated revenue and establishment of a renewals and replacements fund sufficient to ensure adequate funds for retirement and replacement of rolling stock, locomotives and other assets which are over "economic age". Under the control of a single Transport Commissioner, the new ministry would have power to determine and control freight rates and fares for rail, road and air transport operating within the State, and define specific spheres of operation of railway and road services. Executive functions of the proposed transport ministry would be exercised by a Department of Road Transport, the Railways Commissioners, the Country Roads Board, the Melbourne Tramways Board, and, if necessary, a Department of Air Transport, all under the direction of the Transport Commissioner.

AUST. MECHANICAL ENGINEERS INVESTIGATING BRITISH DIESELS:

Besides the Chief Mechanical Engineers of the Victorian and Western Australian Railways (Messrs. A. C. Ahlston and F. Mills) who are overseas investigating the suitability of British diesel-electric locomotives for Australian railways, the C.M.E. Tasmanian Transport Commission, Railway Branch (Mr. G. J. Hastie) and the Director of Mechanical Engineering, Commonwealth Department of Transport, Railway Standardisation Division (Mr. O. Meyer) are also in Britain on a similar mission. Mr. Hastie will endeavour to expedite deliveries of diesel-electrics ordered for the Tasmanian Railways, besides studying methods of servicing diesels.

S.A.R. EQUIPMENT NOTES

An innovation brought about by curtailment, if not cessation, of steam suburban train services in Adelaide, owing to periodic coal famine, has been the regular working of a skeleton suburban service by railcar units. Owing to there being insufficient trailer cars, a number of side-door cars have been assigned to railcar service, making standard consists of motor-car, side-door car, and either motor, or additional railcar trailer, according to the service operated. The red-brown side-door cars are dwarfed by the wide 55-type railcars, nearly all of which have been repainted in the SAR standard green and cream. Car No. 39 has been recently repainted with addition of oblique green and cream alternate stripes on the leading end to improve visibility at the numerous level crossings in the Adelaide area. A number of Victorian AE and BE-type 72-ft. main line corridor cars have been running on SAR country trains ever since the end of the war. It is not known by what arrangement these cars have been retained in South Australia, or whether they are rented, or if demurrage charges are payable. Engine 620 "Sir Winston Dugan" has been de-streamlined and equipped with extra smoke deflector-

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GAS TURBINE ELECTRIC LOCOMOTIVES
By Edward A. Downs

Referring to the article "The Steam Turbo-Electric Locomotive" in our January issue, Mr. Edward A. Downs comments that a "more advanced form of power—the Gas Turbine Electric Locomotive" is somewhat more than "just on the horizon" as suggested by the writer, Mr. Charles Kerr, junr. A magnificent photo of the Alco-GE's new gas turbine-electric appears in the January issue of "TRAINS," our distinguished American contemporary. Streamlined, and fitted with four 4-wheeled trucks, it resembles the most recent straight electric locomotive of the Virginian R.R.

While the first locomotive of this type to be constructed in the U.S.A. has recently been completed by the joint efforts of the American Locomotive Company and General Electric Company, for operation on the Union Pacific Railroad, in actual fact the first locomotive using a gas turbine as the main power was delivered as far back as 1941 to the Swiss Federal Railways by the Swiss Locomotive and Machine Works and equipped with a gas turbine and electrical equipment supplied by Brown Boveri and Co., of Baden, Switzerland. Numbered 1101, the locomotive is not unlike conventional Swiss electric and diesel-electric engines, and is, in fact, quite similar in outline to the proposed electric power of the New South Wales Railways depicted on page 3 of the December issue.

The Swiss loco. employs a D.C. electric drive from four traction motors each powering one axle; of these four axles two are rigid, placed in the centre of the unit, while the other two are each in leading and trailing trucks along with a non-powered axle, thus presenting a wheel arrangement designated 1A-B-A1. The driving motors are powered by a D.C. generator geared to the shaft of the gas turbine unit. Compressed air is delivered by an axial flow compressor at 40 lbs. per sq. in. to the combustion chamber where liquid fuel is burnt, consequently raising the temperature of the compressed air to around 1,100 degrees F. The resultant hot gases are forced by the expansion through the turbine, which drives both the compressor and the generator. This locomotive has dual controls for double end operation, the main controller varying both the traction motor speed and the gas turbine fuel supply. The unit requires about eight minutes to start with a small diesel outfit which is capable of moving the loco. at six m.p.h. while the main turbine unit is warming up.

The unit can exert a starting tractive effort of 29,000 lbs. at speeds up to 16 m.p.h., while the one-hour rating is 17,000 lbs. at 30 m.p.h. and the continuous rating 11,000 lbs. at 45 m.p.h. Built to operate at a maximum speed of 70 m.p.h., the roadworthy weight of the locomotive is 101 tons, and the maximum axle load 17.6 tons.

The Gas Turbine Locomotive should have many advantages over present forms of motive power under construction: initially the cost of a comparable unit should be less than diesel-electric, but would no doubt be much more than steam power; although gas turbines will burn more fuel than diesel electrics, as only a low grade fuel such as bunker oil is required, fuel costs would still not be as great; maintenance costs will be very low compared with either diesel-electric or steam locomotives, as the only major moving part is the high speed turbine rotor mounted in simple bearings. Other important advantages are, the smooth-riding qualities due to the absence of reciprocating parts, with a consequent elimination of track pounding; the ability to exert much more power for weight; a very clean exhaust; the use of air as a brake by absorption in the compressor and its blowing off through the exhaust. This type of power would be ideal for multiple unit operation, while its availability and flexibility have considerable advantage over steam power, though these attributes are also characteristics of electric and diesel-electric locomotives. Another feature of the Gas Turbine Electric power is that it requires no water, thus an adequate fuel capacity would permit extended runs of any distance required without changing locomotives, stopping for water or to refuel.

Such power may yet be suitable for the Commonwealth Railways "Trans", where the water supply is a major factor in the selection of new motive power.

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similar to the rest of the 620-class light Pacifics. This once-green engine, like No. 621, is now painted black with raised silver letters S A R on tender tanks. No. 626 of this class has a Davies & Metcalfe Type J exhaust steam injector on the fireman's side, as have the newer 520-class 4-8-4's.

V.R. SIDING FOR WENSLEY BRAY OPEN CUT?

At the request of the Government the V.R. is examining alternative proposals for a branch line some six miles long from Winchelsea to serve the Wensley Bray brown coal open cut, together with necessary overhead loading ramps and sidings, or provision of additional sidings and loading facilities at Winchelsea, together with improved coal handling facilities at Geelong, Colac and Warrnambool, which are the main consumption points of the present output, which is rising above 1,000 tons weekly. At present coal is hauled by motor trucks for transhipment to the railway at Winchelsea for haulage to Western District industrial plants.

QUEENSLAND ROLLING STOCK NOTES

Engine 930—second of the order for 20 C-17's from Clyde Engineering Co.—went into service on January 1, 1949. Bundaberg Foundry has arranged to build 2-ft. gauge steam locomotives for sugar mill lines to standard Fowler designs, under an agreement with John Fowler (Leeds) Ltd. They are also overhauling about a dozen QGR C-17 engines. Ipswich shops are to build an additional 20 of the new CC-17 class 2-8-2 freight engines after delivery of the initial six at present on order. An additional 600 steel open freight cars are on order—300 each from Evans Deakin Ltd., and Metropolitan Cammell Carriage and Waggon Co., Birmingham, England. The coastal steamer, s.s. "Dubbo," loaded the first four reconditioned A.S.G. locomotives for Tasmania in Brisbane early in February. Altogether, eight are going to T.G.R. and two to the Emu Bay Railway Co., after modification at the Rocklea works of Evans Deakin Ltd., reports Mr. Ken Rogers, of Brisbane. A contract for twenty additional standard B-18¼ class Pacifics has been let to the Vulcan Foundry, Leeds, England, by the Queensland Government. They will be almost identical to latest locally-built engines of this class, except for enlarged tender capacity. Nos. 930 and 931 (Clyde Nos. 495 and 496) C-17 class were delivered to the Q.G.R. in December and February, respectively, writes Mr. Trem Watson, of Sydney. (No. 930 entered service on New Year's Day. —Ed.)

News in Brief:

On January 20, 1949, a new private siding was opened for the Rosella Preserving Co., one-half mile on the "down" side of Tatura, Victoria, at mileage 110½. Mechanical stokers recently fitted to SAR Engines 606 and 609 "Duke of Gloucester" are Standard Stoker Co. HT type, similar to those on the more recent additions to 720-B class 2-8-4's. When more stokers can be obtained, additional 600-class Pacifics will be equipped. Class 520 light 4-8-4's may also be stoker-equipped at a future date. A 40-ft. extension eastwards of No. 1 East platform at Flinders Street station, Melbourne, was available for use by Christmas crowds. It enables longer trains to use this platform without fouling points giving access to the central portion of No. 1 under Prin-

(Continued on page 19)

THE WAITING ROOM—
Letters to the Editor

The Editor,
Railways in Australia.

Dear Sir,—Allow me to commend you on the excellent reproduction of the Q.G.R. C17 class loco. This brought back memories of some months of army service in Townsville—the only bright spot of which was that we were camped at Oonoonbah—right in sight of the trains! Though so often maligned by the uninterested, the railways of the north fascinated me more than those of any other State I have seen, as portraying the true atmosphere of "railroading," shall I say, before the streamlined era.

Practically all of those Northern Division main-line engines were kept in spic and span condition, with paint and brasswork bright, and were really something to see—this in 1944 at any rate. Many a pleasant evening I spent watching the long Brisbane Mail (13 cars) pull out in charge of an "improved" C17. I believe they were sometimes known as "Sedans," due to the large and roomy cab with which they are fitted. Incidentally one of my last views of Australia on embarkation was of 855 which had pulled our train down to the Townsville wharf.

Hoping we will be seeing more of the Q.G.R. in your worthy magazine, to which every success.—Yours, etc.,

G. E. SCHULZ.

Footscray, Vic.

The Editor,
Railways in Australia.

Dear Sir,—I am writing this to clear up the mistaken ideas about the availability of the UNRRA 2-8-2 locomotives in N.S.W., which was mentioned in the Feb., 1949, issue in "What the Railways Are Doing."

These locos. could be used between Sydney and Unanderra or Junee, the only modifications would be required on platforms between Picton and Liverpool. Rolling stock up to 14 ft. 6 in. high and 10 ft. 6 in. wide may be used on these lines. The following stretches also allow for wide stock:—Emu Plains - Blaxland, Bowenfels - Kelso, Gresham - Murrobo, Spring Hill - Orange East Fork, and West Maitland - Branxton.

The railways had working for a bigger car, and in 1912 the "Australian Standard Loading Gauge" was decided on; this loading gauge has been modified from time to time, such as allowances for electric overhead, etc. Most tracks have been realigned as repairs, etc., were required, so it would be necessary to rebore the Boronia Tunnels between Cowan and Hawkesbury River and the Woy Woy Tunnel on the Northern Line, and the Zig Zag tunnels between Newnes Junction and Lithgow on the Western Line.

Perhaps someone else can enlarge on this for the various States.—Yours, etc.,

ARTHUR W. PERRY.

Artarmon, N.S.W.

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post in due course; please enclose a stamped, addressed envelope.

K. C. ROGERS, Brisbane, Qld.—Photo used this issue. Much appreciated. Thanks.

E. A. DOWNS, Mosman, N.S.W.—Using Gas Turbine article. Choice between this system and steam turbine would depend on several factors. Unless coal can be used, the gas turbine would seem unlikely to develop extensively here.

A. W. PERRY, Artarmon, N.S.W.—Saving the table for future use. Thanks for the trouble.

G. R. GEE, Stawell, Vic.—Thanks for pic. Unfortunately it would not reproduce well. R class photo welcome, but seems a pity to de-mount it. Clipping sent to Bulletin Editor, who has been asked to return to you. Thanks again.

E. A. FROST, Auburn, N.S.W.—Leave it to you how you tackle the article. Almost anything about railways is of interest to our readers. Thanks for good wishes.

J. SIMPSON, Asquith, N.S.W.—No doubt about your enthusiasm for diesels! You will like our next issue, which will feature the new 701 class. Picture of Silver City Comet in mind for early use.

L. G. GLENDENNING, Gordon, N.S.W.—Apologies for late acknowledgment. Press cutting most welcome, as items like this often missed.

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

This month's Favourite Photo. is the work of reader D. Murray of Burwood, N.S.W., and shows the Down Baradine Passenger entering Binnaway on the N.S.W. Railways. No. 1209, an elderly 4-4-0, looks quite smart at the head of a short train of modern, all-steel cars. The date—31/12/39.

162 Engine Pictures

NEW SUBURBAN LOCO.—Queensland Government Railways No. 949, first of a new class of twelve 4-6-4T locomotives built at Ipswich Shops (Builders' No. 199) in December, 1948, for the Brisbane suburban lines. Classed DD17, these engines have two cylinders 17 in. x 24 in.; driving wheels are 51 in. diam., boiler pressure 180 lbs., weight 62 tons, tractive effort at 80% boiler pressure 19,584 lbs.; four tons of coal and 1475 gallons of water are carried. Other features include a chime whistle, automatic lubricators, and roller bearings. These machines will work mainly between Ipswich and Shorncliffe, releasing B18¼ locos. for more important duties. (Photo. and data by Ken Rogers, Brisbane, Qld.)

ROLLING STOCK PARADE

Thought to be the sole example in existence, this mobile blood transfusion car was placed in service recently on the Western Australian Railways. Originally a second class AF suburban car, the vehicle was reconstructed and fitted out at the Midland Junction Shops. Every facility for blood transfusion and processing has been provided for use by the Red Cross Society. The car will be hauled to remote parts of the system for use by blood donors unable to visit Perth. (Block kindly lent by Victorian Railways.)

Question Box

Arrangements have been made for our Question Box to be handled by a well-known A.R.&L.H.S. member. Questions on any aspect of Australian railway operation may be forwarded; address envelope to "Question Box," c/o Traction Publications, 29 Seymour Gr., Brighton Beach, S.5, Vic. It is regretted that direct answers cannot be posted to correspondents.

The opinions expressed by contributors to "Railways in Australia" are not necessarily those of the publishers, nor of the Australasian Railway and Locomotive Historical Society. The Society does not accept responsibility for any matter not contained in the "Bulletin" section.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held:—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

The VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at the Model Dockyard, 216 Swanston Street, MELBOURNE; visitors welcome.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Region) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

(Continued from page 4)

ces Bridge. A similar, but wooden, extension of the east end of the main (South) platform at Ballarat station has engulfed a signal mast and two water cranes, says Mr. W. Jack, of Ballarat, who adds that citizens of that city have been negotiating with the Railways Commissioners over provision of a clock in the station tower, towards the cost of which the Advance Ballarat Association has offered to contribute. Vague reports suggest that the W.A.G.R. may consider converting an additional twenty O-class 2-8-0's to N-class 4-4-4 suburban tank engines. New freight cars added to stock by the S.A.R. during the year ended June 30, 1948, comprised 3 bogie tank cars, 179 DWF 4-wheel louvre cars, 1 OF 4-wheel open car and 2 steel brake vans for broad gauge lines; 53 OCN and 22 ODN bogie open cars, 2 MCN bogie box cars, 4 RCN and 1 RCB bogie refrigerator cars for narrow gauge. The narrow gauge cars were purchased from the Commonwealth Disposals Commission and the open cars were provided with wooden superstructures built on former wartime flat cars, for use in coal traffic from the Leigh Creek coalfield at Telford, on the Central Australian Railway. Clyde Engineering delivered four new 10,000-gallon tank cars to the N.S.W.R. account Atlantic Union Oil Co. during 1948. They have builder's plates incorporating works serial numbers. It is probable that Port Augusta station building is the first such building in this country to be completely air-conditioned. The plant operated for the first time early in January, and gave Commonwealth Railways traffic officials welcome relief from the official shade temperature of over 100 degrees, writes Mr. Brian Castle, of Seacliff, S.A. Indicative of the saturation of the Victorian Railways Eastern (Gippsland) Main line with brown coal and briquette traffic, a tally made recently over some twelve hours at Warragul by our colleague, Mr. L. G. Poole, of East Malvern, showed seven Up trains and eight Down, not including local pick-up freights, passenger trains, and the arrival of the Noojee branch freight. In addition light engine movements were made to Yarragon to assist Up trains, and these engines returned from Drouin either light or attached to Down freights. Work on the earthworks for the duplication of this congested 18-mile section from Yarragon to Longwarry is being pushed ahead and is scheduled for completion by May. The V.R. is making use of aerial survey photography for mapping stations, yards and workshops areas. A recent aerial survey completed in 4½ days would have taken months by conventional methods. Enlargements of aerial photographs, suitably scaled, have been found suitable for issue in lieu of working diagrams for use by construction crews, etc. Work has commenced on the construction of a new station building at Kuraby, Queensland, in connection with the re-alignment and duplication of the busy South Coast line between Rocklea and Kuraby. Reports from South Australia and Queensland indicate that Perry Engineering Co., Adelaide, have some 17 small 2-ft. gauge steam locomotives of either 0-4-2 or 0-6-2 Tank types under construction for various sugar mill lines in Queensland. Several Perry 0-6-2's built during the past ten years are already at work in Queensland and have refinements such as electric lighting and mechanical lubrication. The Tasmanian Government is calling tenders for 4-8-4 type locomotives as recommended in the recent Chapman-Meyer report (see RAILWAYS IN AUSTRALIA, Sept., 1948, issue). The tender will almost certainly go to a British builder, as no Australian builder can promise delivery in under two years at the earliest.

A fifth A2-class 4-6-0 (No. 944) was equipped with boxpok cast steel driving wheels in December, 1948, according to Mr. W. Jack, of Ballarat, who reports having seen No. 944 on December 27 at Ballarat. Unloading of coal supplies for the Fyansford (Geelong) works of Australian Cement Limited will soon be expedited by a travelling coal transporter bridge, equipped with a grab and able to operate over a coal dump area of 400-ft. long by 250-ft. wide. The plant has a capacity of 150 tons per hour, and was supplied by Malcolm Moore Ltd., engineers, Port Melbourne. Additional and altered sidings were provided at Fyansford by the V.R. in connection with this installation. A comprehensive plan for an extensive pedestrian subway system for all entrances to Flinders Street station, Melbourne, at an estimated cost of £250,000 may be adopted by the Melbourne City Council. The arrangement at the congested Flinders-Swanston streets intersection provides for raising the street level by seven feet with inclined passenger ramps leading to and from the station, the several street footpaths and the mid-road tramway safety zones. Under the middle of the intersection would be a circulating area. The Degraves-st. subway plan has been carried to the stage of negotiations with adjacent property-owners for space for entrances in their buildings and with the V.R. who might be the constructing authority if present plans come to fruition.

ERRATA

On page 4, February issue, reference was made to delivery of Queensland Railways first C-17 locomotive built by Clyde Engineering Co. as No. 959. This should read **No. 929.**

On page 4, February issue, it was inadvertently stated that the first of twenty two-car rail motor units had been tested by the New South Wales Railways. This, of course, should read **ten** two-car units—a total of twenty cars.

Queensland: To provide relief for the 8.45 a.m. Wallangarra Mail ex-Brisbane, the Queensland Railways are now running a 7.35 a.m. passenger to Toowoomba, stopping only at Ipswich and Helidon. Time for the 101-mile run, including the climb up the Main Range to Toowoomba, is 4 hours 10 minutes, reports Mr. Ken Rogers, our Brisbane correspondent.

Victoria: Two derailments of passenger trains occurred during December; one, which involved the northbound "Spirit of Progress," occurring at over 50 m.p.h. at a level crossing near Wangaratta, on the night of December 15. The leading bogie wheels of the S-class locomotive were derailed. An electric train was derailed outside St. Kilda station by stones on the track on December 19. No one was injured in either mishap.

(Continued from page 1)

These are the only figures to hand, but those from Victoria, New South Wales and Queensland would be even more illuminating.

Much could be written about the bugbear of transfer stations, Terowie in South Australia stands out in grisly memory. One of the coldest places in the continent in winter, and one of the busiest in the war years. The broad gauge train arriving from the South would require three narrow gauge trains to clear the load because the very heavy grade to the north of Terowie limited the load of the "mechanised kettles" to 130 tons. The transhipment at Terowie was done by civilian labour who stopped work when it rained — and it rained often in that winter of 1942-43 — and trains to the North with much needed war equipment were running days late. Truly we paid a terrific price for all those neglectful years. And yet we were saved by "Our land's long-suffering star" and the Australian Railwaymen generally, who — with all their faults — did a truly wonderful war job.

The wheel has turned full circle once more, and again we are in the turmoil of the "Uniform Gauge." Royal Commissions have sat and decided that such and such should be done, and would be a "good thing," but there is never any mention of "when." That great Railwayman, Sir Harold Clapp, is working hard to repair our fifty-year-old mistakes and, perhaps in time for the next world upheaval, we shall have trains running from Cairns to Geraldton without change, a journey undertaken in wartime involving eight changes of gauge in ten trains.

It seems to be an accepted idea that our uniform gauge must be the same

as the European or American standard of 4 ft. 8½ in. It is admitted that much has been accomplished, and nearly all Railway development has grown up on this gauge. Trains of over 5,000 tons have been hauled by 400-ton locomotives. Speeds better than 125 miles per hour have been run by the world's expresses.

Australia to-day calls for high-speed travel between her capital cities, and for many years yet there will be a large number of people who prefer the comfort and speed of a trans-continental train to air travel, no matter how luxurious the latter may be. And there will be many like the old lady of fable who "would have nothing to do with the new-fangled flying machines, but would travel by train as God meant her to!" The aspect of fast heavy freights between cities and states is too obvious for comment. Is it any credit to this country that motor bodies can be sent from Adelaide to Brisbane cheaper and quicker by road than by train?

Australia lends herself peculiarly to high-speed rail travel; she could lead the world in what is left to develop on the rails, so why should she not develop an "Australian Standard Gauge," and not rest on the archaic survival of a century ago?

Converting a Railway Gauge is a thing not lightly undertaken by any country, but if Australia, with her multiplicity of gauges, is about to launch out on this tremendous task, is it unreasonable to suggest that she begin where all the other Railway Engineers have left off. No one has ever suggested that that odd survival of 4 ft. 8½ in. is the ideal gauge, George Stephenson himself appears to have regretted his choice at one stage of his career, however, it is one of those things — like Topsy — which just growed, until to-day, the so-called "Standard Gauge" is pre-eminent in the world of Railways.

But Australia has no need to bow to this tradition; her lines will never cross the Timor Sea to her nearest land neighbour in Indonesia. She owes no obligation to conform to the rules of the World's Railways, and as she is about to alter two-thirds of her rail tracks, she can just as easily relay them to an Australian Standard, and bring joy and contentment to the hearts of every one of her Locomotive builders who, for nearly a century, have craved for those few extra inches between the frames which would allow them the larger boiler for the greater power called for by modern trains, without taking the boiler centre beyond the limits of accepted practice.

The Australian Railways operate on three main gauges, the route mileages being:—

3ft. 6in. gauge	14,128 miles
4ft. 8½in. gauge ..	9,385 miles
5ft. 3in. gauge ..	7,555 miles

and though it is irrelevant at the moment, it may interest many Australians to know that there are Railways of 2ft. 0in., 2ft. 6in., 90 cm. and 3ft. 0in. gauge in this country, and there may be others. Queensland, for instance, has 900 miles of 2ft. 0in. gauge railways in the Sugar Fields, and some of them are passenger lines. All the 2ft. 6in. gauge lines in Victoria are passenger lines, but these lesser lines would mostly remain without the standardisation schemes for many years.

What gauge, then, shall we make our Australian Standard? We could follow the magnificent examples of India, Ceylon and Argentina, and build to the 5ft. 6in. gauge. Anyone who has seen the wonderful railway systems of India cannot fail to be impressed by the efficiency which can be attained and maintained on the 5ft. 6in. gauge. Or we could gladden the hearts of the friends of the Soviet and pay homage to "Uncle Joe" by adopting the Russian Standard of 5ft. 0in.! We could even go back to the good old days of Brunel and "spread" ourselves on the 7ft. 0in. gauge. Or we could be real Dinki-di independent Aussies and adopt a real Australian gauge of 4ft. 10 13/16in. just to be different.

As we are convinced that those extra few inches would be a very good thing, there lies before us a fairly easy way of getting them. Let us make 5ft. 3in. the Australian Standard gauge. Already two States, with 7,555 miles of track, use this gauge. Now, before Sir Harold gets off his bicycle and before the partisans of the 42in. and the 56½in. howl to heaven that "it can't be done," let us consider the question for a moment. Millions are going to be spent in the conversion—would it matter very much if we spent, say, a couple more, on sleepers to take our rails outward to the 5ft. 3in. instead of inwards to the 4ft. 8½in.?

That is the argument. We shall be told that the tracks of South Australia and Victoria will not need to be re-sleepered, whereas if the 5ft. 3in. were adopted, the 9,385 miles of 4ft. 8½in. would require this to be done, as would the 14,000 miles of 3ft. 6in. in any case. Admittedly, the argument has force, but it would be worth while to think ahead for once in our history and take this easy way of building up a Land Transportation Machine which could become second to none in the world.

Of course it will never happen; Australia's railways will conform with those of the rest of the world on the 4ft. 8½in. gauge, but it's nice to think that it **might** have happened!

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Railways in Australia

and

A.R.L.H.S. BULLETIN

The Magazine about Australian Trains

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Vol. II, No. 4 APRIL, 1949

CONCERNING OURSELVES

Some time ago we mentioned that strong exception had been taken in certain quarters to our editorial policy. Now, the continued existence of this journal depends in no small measure on the whole-hearted support of our readers, and it seemed only right to obtain their opinions as far as possible. In addition, our very close association with the Australasian Railway and Locomotive Historical Society required that their wishes be considered, and the views of that body were sought accordingly.

Reader opinion proved overwhelmingly in favour of continued, but constructive, criticism in our editorials. Indeed, opposition to this policy was restricted entirely to Victorian readers — a rather surprising result, in view of the criticism levelled at the railways of that State in the press and elsewhere.

However, after due consideration, the A.R. & L.H.S. have decided that, to ensure a continuance of the cordial relations they now maintain with the various railway administrations, they would prefer that criticism of these bodies should be avoided.

We feel that this is rather a pity for, hard working as are our railway authorities, their very closeness to the job often prevents them from seeing "the wood for the trees." Criticism from onlookers is often advantageous for this reason, and what more qualified band of onlookers could there be than the railway enthusiasts of this country, whose one desire is to see the railways of Australia attain the highest possible peak of development?

However, the decision has been made and we accept it, albeit reluctantly. To our readers we extend our sincere thanks for their interest and encouragement.

PLEASE READ THIS.

Subscriptions to this journal continue to increase at a pleasing rate, and negotiations are in hand for retail sales in overseas countries. Nothing like saturation point has yet been reached in Australia, however, and we ask our readers to make "Railways in Australia" as widely known as possible. By doing so, you will help us to give you a bigger and better magazine each month.

Reader sales, however large, are only part of the income of any journal. Advertising is needed in large quantities to bridge the gap between income and expenditure. Any reader in a position to advertise or influence advertising will be doing a great service, not only to us and to our readers, but to himself, for "Railways in Australia" is read by a wide and growing circle throughout this country and overseas.

YOU CAN HELP

Every reader can assist by patronising the firms which advertise in our columns. Don't forget to mention "Railways in Australia" whenever you write or call.

We want to give you more pages, more pictures, better paper.

HELP US TO HELP YOU!

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

TO ADVISE VICTORIAN RAILWAYS
U.K. Expert Arrives

"I have not come out here to tell you what to do. I am here to have a look around and, if possible, to give you some advice."

Mr. John Elliott, Chief Regional Officer of the Southern Region, British Railways, said this on arrival in Melbourne last month. He was welcomed by the Minister for Transport (Mr. Kent Hughes). Mr. Elliott was invited here by the Victorian Government, and expects to remain until June. He is accompanied by Col. A. C. Payne, head of the Regional Staff Training College at Woking, Sussex.

Interviewed by the press, Mr. Elliott commented that it was too early to say what the railways of Britain will do under nationalisation, but great effort is being made. An interesting development is the production of a double-deck train to provide more seating accommodation. The prototype is now in production, and is expected to provide at least one-third as many more seats as existing rolling stock.

This is Mr. Elliott's first visit to Australia, and he is looking forward to his mission in Victoria.

TRAINING SCHOOLS

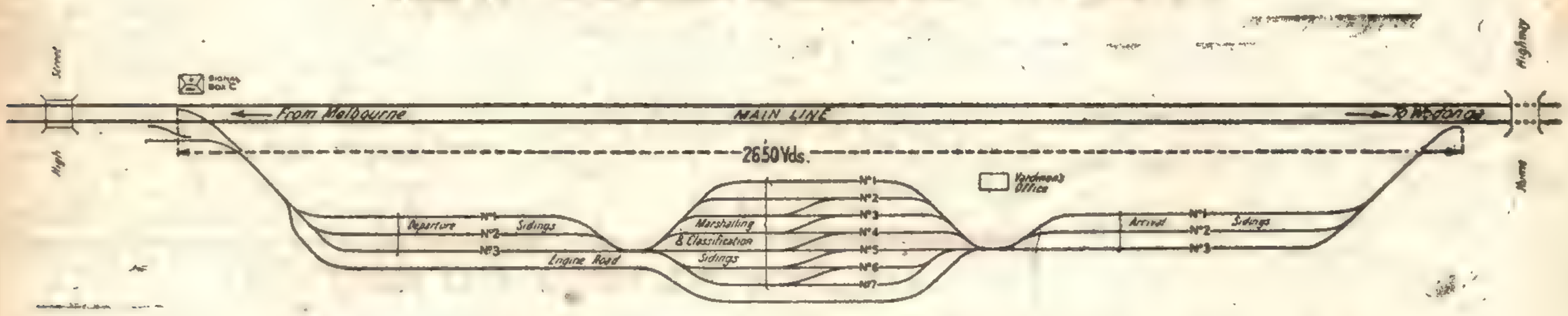
Col. Payne said that half a dozen training schools existed in Britain to train railwaymen, in every department, in their own jobs, in their contact with the public, and in all other aspects of their work. The Minister for Transport expressed keen interest in this scheme which, he said, has no counterpart in Victoria.

SPECIAL MOTOR-BODY CARS, L.C.L. CONTAINERS
New S.A.R. Rolling Stock

The first of 35 new OA-class motor body transport cars, 70 ft. long, specially designed by the S.A.R., and under construction at their Islington shops, is illustrated in this issue. These cars are for express freight train operation between Adelaide and Melbourne. In order to provide the necessary cubic capacity with minimum tare weight, the cars have been constructed of steel and wood with welded truss-type side frames and timber lining on sides and floor, which is attached by stud welding to the structural steel members of the car in lieu of bolting. The ends are of pressed steel, and are hinged to allow for loading under their own power of complete cars from end-loading ramps.

These cars carry 12 motor bodies in two tiers; the bottom row on the floor of the car, and the top tier on bearers and adjustable brackets. The tare weight is only 19.5 tons. Two side doors are provided adjacent to each end. These cars offer a particular advantage over O-class standard gondolas temporarily converted for the purpose, and they can be back-loaded with general merchandise to obviate the use of a number of Victorian freight cars, which, due to the unbalanced loading between the two systems, are required normally to return to Victoria empty. The cars are loaded at the plants of

NEW MARSHALLING YARDS



Previously mentioned in our columns, the new marshalling yards at Seymour, on the Victorian Railways' North-eastern line, are now nearing completion. As shown in the above diagram, the new yards, which extend for over a mile on the up side of the main line, comprise three arrival tracks (totalling 6,000 feet in length), seven marshalling and classifying sidings (7,200 feet), and three departure roads (8,000 feet). Shunting is by gravitation throughout, and the arrival and departure roads will accommodate 447 trucks, the marshalling sidings 177. Up trains only will be handled, down trains being filtered through the existing yard at Seymour Station. Forty-six powerful glareless and shadowless lighting units, mounted on 50 ft. poles, will facilitate night work. In addition a network of loud-speakers and "speak-back" telephones is provided throughout the yard, connected with the Yard Foreman's Office. (Block kindly lent by Victorian Railways.)

Adelaide motor body builders and hauled by fast interstate freight trains to the overhead crane roads at Spencer Street, Melbourne, where the bodies are transferred to road vehicles. Owing to their great length, these cars will have great utility in transporting such items as poles, timber, piping and other lengthy consignments normally loaded on flat cars, and often requiring use of one or more safety "match trucks." The cars are carried on S.A.R. standard cast steel "Bettendorf" type freight bogies, which, owing to the great length of the cars, are centred well in from the ends. Capacity load rating is 30 tons.

L.C.L. CONTAINERS

The New South Wales Government Railways have, in conjunction with the S.A.R., recently agreed to handle specially-designed steel containers for interstate freight traffic via Broken Hill in less than car-load lots (L.C.L.). Construction of 54 of these units has been undertaken at Islington shops for this joint inter-system traffic. Containers have been widely used by the S.A.R. for intra-state L.C.L. freight traffic for many years, particularly to facilitate transhipment from broad to narrow gauge and vice versa.

The steel containers are designed to permit efficient handling in all classes of freight cars on the two systems, and for ease of transhipment at break-of-gauge stations, with the minimum of manhandling, by use of crane power. The design incorporates two levels of adjustable shelving, each consisting of two side racks on which cross bearers rest in order to give the greatest flexibility for different types of freight. As the double racks are housed in the side panel fluting, the adjustable shelving does not encroach on the normal internal dimensions of the container, thus giving maximum loading capacity. Wooden floors are provided in these units and the tare weight of the container is 2,310 lb. Maximum capacity is up to 5 tons of freight.

Features leading to the adoption of these new units were:—

- Improved loading and packing by consignors in own plants.
- Security of freight with total elimination of claims for loss in transit and reasonable security against damage.
- Elimination of the use of tarpaulin sheets for open cars.
- Quicker turn-around of freight cars and more direct routing of inter-capital freight between Adelaide and Sydney (or Brisbane).
- Elimination of labour problems at transfer stations such as Terowie

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Victoria.

INERTIA

Contributed by a reader of the "Newcastle Morning Herald," this poem appeared recently in that journal. Non-corridor passenger cars are known to the public of New South Wales as "box carriages." Cars of this type are invariably to be seen standing in short dead-end sidings at principal stations, ready to meet sudden increases in loadings.

(Sent in by reader K. Magor, Hamilton, N.S.W.)

If it's the same one, it would appear
To have been there for many a year.
It doesn't move the population,
That box carriage at Broadmeadow station.
It's up there at the northern end,
Left alone for itself to fend;
While locos go by clanking and hissing,
There it remains, the buffer-stops kissing.
Are into its boxes nightly banded
Railway staff who find themselves stranded?
Or is it part of a scientific investigation
Of rusty wheels? The carriage at the station.

Whilst its fellows are busy attached to "mails,"
There it remains on little-used rails;
Alone, and in splendid isolation,
The box carriage at Broadmeadow station.
We are promised that in history's future page,
There may be written "standard gauge,"
And though there'll be many years to wait
Before all our lines are four feet eight,
That box carriage at Broadmeadow station,
Perhaps it's waiting for unification,
And then will move from its lengthy stay,
And finally finish up in Perth, W.A.

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and Broken Hill, with reduced transhipping costs.

These features should enable the railways to retain existing L.C.L. inter-system traffic, and develop considerable additional traffic by providing modern means for handling in bulk less than car-load traffic.

NEW W.A.G.R. STATION

On 10th December last, a new suburban station was opened at Meltham, 3 m. 32 ch. east of Perth, on the West Australian Government Railways. Being partly on a sand fill, the new station, which is of brick and tile construction, is supported on a concrete beam system. Of pleasing appearance, the station building embodies a signal cabin as well as the normal rooms and offices. An overhead footbridge provides access to the island platform. The station serves a new residential area.

(Continued on page 20)

OUR COVER PHOTO.

Out of the "Dead Heart" of Central Australia, the southbound weekly mixed from Marree, S.A., heads into Quorn, junction point with the 3 ft. 6 in. gauge Northern Division of the South Australian Railways. Engine No. 16, Commonwealth Railways class NM is almost identical with Queensland C17 class 4-8-0's. They work all trains on the long Central Australian Railway, assisted during traffic peaks by "borrowed" S.A.R. T class 4-8-0's. (Photographed by John L. Buckland, near Quorn, in September, 1938.)

(In response to requests received, our cover photos. will be reproduced on this page whenever space permits.)

THE WAITING ROOM—
Letters to the Editor

The Editor,
Railways in Australia.

Dear Sir,—Like many of your correspondents, I am not so keen on the policy of "No criticism of the various railway systems of Australia." As long as criticism is of a constructive nature, it is my opinion that it would be well received by the various administrations who, after all, are always asking for "suggestions."

However, I am sure you have your reasons, so I am content to leave it in your hands and offer my congratulations on a very fine effort. "Railways in Australia" is to Australia what "Trains" is to America, and "The Railway Magazine" is to England.

Wishing you every success.—Yours, etc.,

LEONARD T. LALOR.

Sea Lake, Vic.

The Editor,
Railways in Australia.

Dear Sir,—I should like to point out an error in the March issue. In the section "What the Railways are Doing," under the heading "S.A.R. Equipment Notes," mention is made of side-loading cars being operated as railcar trailers behind 55-type railcars. This should read "75-type railcars." No trailers are used with the small 55-type cars; they work two cars back-to-back in suburban services, although 55-type cars, No. 9 (diesel) worked from Islington Workshops to Victor Harbour, towing the two elderly horse trams which work from the mainland to Granite Island there. They had been brought to the workshops for overhaul and repaint by the same means, but I do not know the type of car used for the up trip. Marker lights were strapped on the railing of the upper deck of the rear tram and the bell-cord of the railcar was extended to the two tramcars. Due to the rickety nature of the tramcars, the journey was made at low speed.

Returning to steam coaching stock being used as railcar trailers, several ex-narrow gauge cars, painted red-brown and having longitudinal seating and end-loading platforms, have been used as railcar trailers for many years in a similar fashion to the side-loaders mentioned.—Yours, etc.,

W. R. FULLER.

Prospect, S.A.

The Editor,
Railways in Australia.

Dear Sir,—Regarding requests for opinions on your editorial policy.

The steel highways of this great land have only just begun to serve their owners in anything like a proper manner, and because we are a young country, small in population, big in area, we cannot afford to plan ahead, like some small Balkan state.

We must have big plans, and bold and determined men to push them. That, in one word, is what we want—"push," and plenty of it. We must number first as our objectives standardisation, and, with it, modernisation. In fact, these are imperative requirements for the military, economic, and physical needs of our land.

I believe Australians are apathetic and ill-informed on railway potentialities because they are unable to see the benefits of a unified national railway system. Thus they have no idea how great a benefit is the railway system of Canada to its owners, as the Canadians see it, for example—as a very great national asset. One of our tasks must be to hammer mercilessly, through the written or printed word, those who use railways as a political instrument. This sorry idea has been the ruination of many good systems in this land.

We must not be frightened to expose the weaknesses inherent in planning, the ineptitude in administration, and the gross ignorance of some of our parliamentarians who don't know a C38 from a tin of sardines. I say, "To the devil with what the politicos think!" If they are wrong, tell them so plainly and bluntly; if they are right, give constructive encouragement, and always—yes, always—campaign for better things. Point out the virtues of overseas systems and the weaknesses of our own.

And, above all, the idea of abandoning railways to air interests in this land where they have not yet begun to show their true worth is absolute financial lunacy.

You have in Sir Harold Clapp a man who can tell you more about standardisation than I can. Why not allow him to do a series of articles for you on this topic, and scrap such relatively unimportant items as the Toronto Tramway and Richmond-Windsor line, etc. These things are gone and forgotten; they are in the past. We must face the present and the future. Our motto: "One Country, One Railway Gauge, One National System of Railways."—Yours, etc.,

R. BARKER.

East Brisbane, Qld.

(We have invited Sir Harold Clapp to contribute to this journal whenever he desires—some comments by him appeared in the December issue. We doubt whether A.R.L.H.S. members would be happy to scrap the historical articles—after all, that is what the Society is for.—Ed.)

The Editor,
Railways in Australia.

Dear Sir,—It is not my intention to criticise your magazine, for I understand the immense difficulty in producing a magazine about railways in this country; but I would like to offer a suggestion. Better quality paper would be advisable, but I am sure this can be left in your capable hands. I would like to see more photographs similar to the Riverina Express and Newcastle Express, which appeared in Vol. I, No. 6, and would like to see plenty of historical photographs and articles about Australian expresses such as the Melbourne Express in the early days. I also think you should continue to publish cover photographs on an inner page similar to the English publication "The Railway Magazine."

I have come to the conclusion that the average person brings to railways an undeveloped mental state similar to the little boy with his first box of trains, and I am sure that, in view of the attitude of so many people to railway enthusiasts, many interested in railways remain in obscurity. I am sure this magazine will become as well known as its English counterpart, the "Railway Magazine," and will eventually reach many of these obscure enthusiasts and make them realise that they are not some peculiar specimen, but a member of an ever-growing body who have discovered that railways are a wonderfully fascinating interest and who are building up a treasure-house of memories and knowledge which will be a benefit and help in years to come.

Your magazine, to my mind, should endeavor to have an all-round interest in that it should view railways from the romantic point of view as well as the technical. I realise that electric, diesel and other forms of rail transport have an important part in railway progress, and should be given full coverage in "Railways in Australia." The steam locomotive was the machine which stimulated an interest in railways, and to-day exercises an appeal, in the age of aeroplanes, glittering limousines and many other marvellous machines, which cannot be usurped, and which can still maintain on substantial lines, many a publishing house which deals in books and photographs about the steam locomotives. I trust you will give the steam locomotive pride of place, for I am sure 90 per cent. of your readers will lose interest in railways with the decline of steam. With apologies to Rudyard Kipling: "It is the steam engine which brought up romance with the 9.15!" Yours, etc.,

F. C. NICHOLS.

Ryde, N.S.W.

(Mr. Nichols amplified several of these points in his letter, which was too long to publish in full. Pride of place will be given in this magazine to the steam locomotive for as long as our readers want it that way—indefinitely, we should judge, from letters received. Paper quality is, of course, largely a matter of economics and prices have increased

(Continued on page 18, col. 3)

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Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post in due course; please enclose a stamped, addressed envelope.

A. H. DUNSTAN, St. Mary's, N.S.W.—Apologies for delay in acknowledging your letter; photos and information particularly welcome—first we have had on S.M.R.—using one pic. this issue, others later.

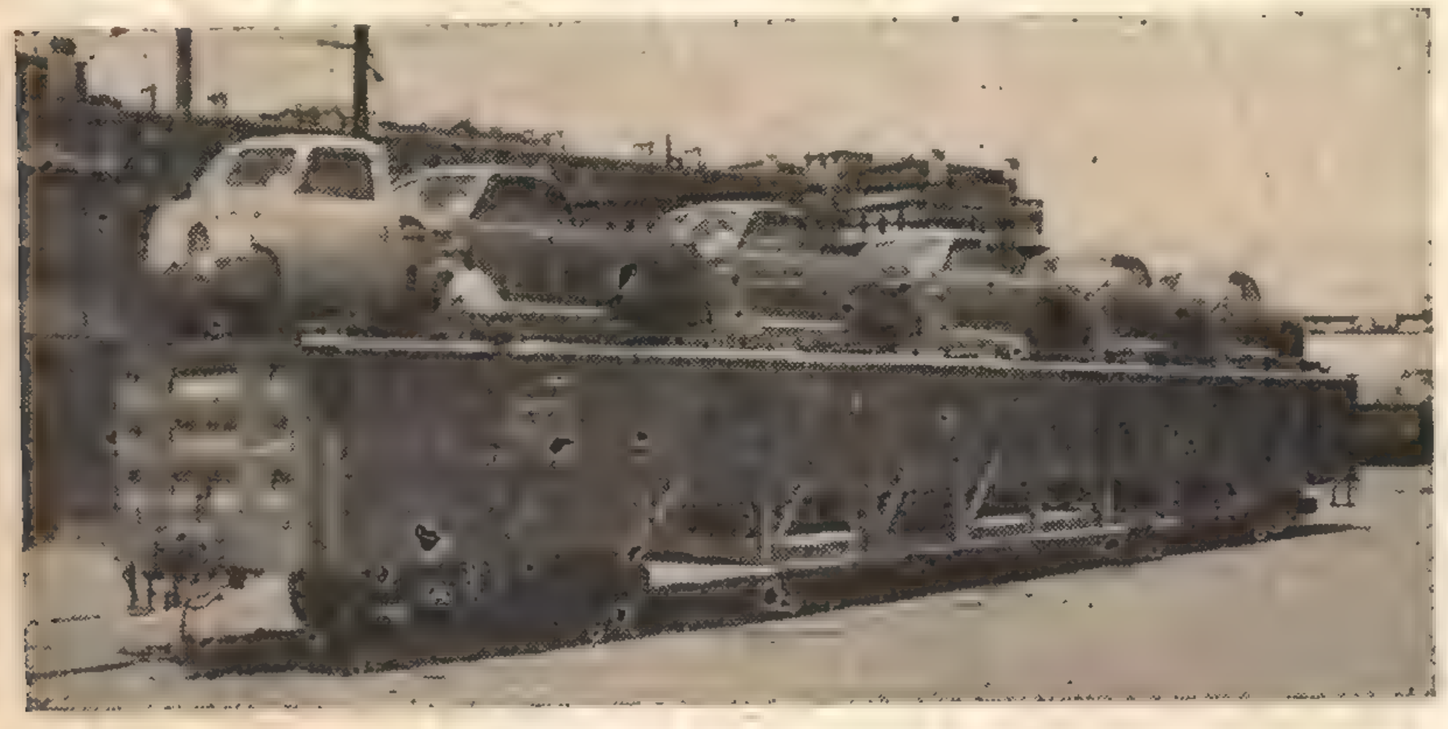
J. STORMONT, Homebush, N.S.W.—Apologies due to you also, we fear. Holding photo for use soon—we get into trouble if too much N.S.W.R. material appears! Thanks for good wishes—always glad to hear from railwaymen.

W. R. FULLER, Prospect, S.A.—We have obtained a copy of the photograph you mention and it will appear in the May issue of "Tram Tracks." Thanks for kind remarks.

A. D. LOCKYER, Barmera, S.A.—Thanks for your continued and very practical support. Adopting several of your suggestions; also using contributions—the photo is particularly welcome. Am using it initially in "Tram Tracks," for which it is more suitable; acknowledgments will be made and print returned as requested; also copy of issue concerned. Regret delay in replying.

ROLLING STOCK PARADE

These streamlined diesel two-car trains are operating on branch lines throughout New South Wales. Built of aluminium, cars are 61 ft. 3 in. long. Motor car No. 601 has two 165 b.h.p. General Motors diesel engines driving through torque converters. Trailer car 701 has a driving compartment for "either way" operation. Control is electro-pneumatic, allowing of multiple-unit operation by one crew. (N.S.W.R. Official Photo. by courtesy of Chief Mechanical Engineer, Department of Railways, N.S.W.)



Twelve motor bodies are accommodated in two tiers in these OA-type 70-ft. freight cars specially designed and built by South Australian Railways for inter-system traffic. No. 1 was photographed at Spencer Street, Melbourne, by J. L. Buckland in January. Cars have folding end doors for loading complete cars, and are painted bright vermilion red in contrast to S.A.R. standard drab gray for freight rolling stock. Cars have bottom-operated auto-couplers, no side buffers (or transition chains), and S.A.R. standard ratchet hand brake lever.

(Continued from page 17)

to, in certain cases, several times those prevailing pre-war.—Ed.)

The Editor,
Railways in Australia.

Dear Sir,—For some months now I have been purchasing your magazine and reading it from cover to cover. It is with interest that I have read correspondence regarding editorials. From my article (R. in A., Feb., 49.—Ed.) you may gather that I am a railway enthusiast, whether it be concerning the Cooktown-Laura line, Sydney's underground, Flinders Street Station, or the time-table between Hobart and Claremont. As I have tried to convey, I feel that all editorials dealing with railways should emphasise the underlying element of service and their wider national horizons, rather than any restricted or parochial aspect.—Yours, etc.,

MACLEOD MORGAN.

Cremorne, N.S.W.

Question Box

Arrangements have been made for our Question Box to be handled by a well-known A.R.&L.H.S. member. Questions on any aspect of Australian railway operation may be forwarded; address envelope to "Question Box," c/o Traction Publications, 29 Seymour Gr., Brighton Beach, S.5, Vic. It is regretted that direct answers cannot be posted to correspondents.

Rev. E. H. Lambert, St. Mary's, N.S.W., asks: " . . . in what particulars the new '58' N.S.W.R. locos will differ from '57' class?"

ANSWER: The 25 D58-class engines

Tales of the Rails

Contributions under this heading are invited from our readers. Tales may be humorous or otherwise, and should describe some incident or incidents on an Australian railway. Events overseas, however interesting, are not desired at present. Write clearly, of course, and on one side of the paper.

WATER, WATER, EVERYWHERE!

We were heading south from Darwin in January, 1946, and were a fair distance from Quorn in South Australia, and it was raining cats and dogs. We had been running through floods for miles and miles, piloted by a gang of fettlers on a Casey Jones looking for washaways. We pulled up just short of a very bad washaway and all piled out, eager to repair it and continue on our way. We did rather a good job for amateurs and had just entrained when the engine whistled and, with steam billowing around us, started off in reverse. Our surprise was short-lived, however, for we only went about a mile, and then stopped again, with the engine on a bridge over a small creek.

It was cold and miserable, and we were all milling round in the mud like a mob of sheep, when volunteers were called for. Like all good soldiers and sailors, we volunteered in a body (anything to get warm!). Imagine our surprise when we were detailed off to form a bucket chain and fill the tender with water. We toiled for what seemed like hours and, finally, with a plentiful supply of water on board, continued on our way.

Small as those narrow gauge tenders look, they are giants when it comes to filling them this way, believe me.

(Sent in by Tom Cox, Auburn, Vic.)

BROAD GAUGE FAN.

The following incident took place at a recent meeting of the Adelaide Model Railroaders' Club, where, like most such clubs, there is a constant war between the "O" and "OO" gaugers.

During the discussion of general business, the President welcomed a visitor and, to find which side of the fence he was on, asked: "What gauge are you interested in?" only to receive the somewhat staggering reply: "5 feet 3 inches!" When the laughter had subsided, the President quietly remarked: "Well, old man, I'm sorry, but I'm afraid we won't have quite enough room here for any of your jobs!"

(Sent in by A. D. Lockyer, Barmer, S.A.)

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now being constructed will conform generally to the dimensions of the 25 D57-class 4-8-2's already in service. Apart from a reduction in cylinder diameter to 21½ in.—the D57's have three 23½ x 28 in. cylinders—reducing the tractive effort from 56,000 lb. to 55,000 lb., the changes will be of a minor nature only, such as better wheel balancing, making the D58's more suitable for both passenger and freight service. Wheel diameter (60 in.) and boiler pressure (200 lb. per square inch), will be the same as for the D57-class.

R. Barker, East Brisbane, Qld., asks: "The reason for the cut-away style buffers as used by Victorian and some South Australian locomotives?"

ANSWER: Since 1937-8, all V.R. and S.A.R. locomotives fitted with automatic couplers have had a small portion removed from the top inner face of each buffer. The purpose is to prevent the buffers fouling with the base of the vestibule connection on certain auto-coupled passenger cars which have no buffers. For some eighteen months now, buffers have been removed completely from all S.A.R. locomotives and rolling stock.

(A further question from Mr. Barker on loading gauges will be answered next month.)

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Buscl, 2 Derby St., Moonee Ponds, W.4. Phone FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

The VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at the Model Dockyard, 216 Swanston Street, MELBOURNE; visitors welcome.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Region) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

THOSE WERE THE DAYS!

"Daisy," first No. 1 of the East Greta Coal Mining Co. (now South Maitland Railways Pty. Ltd.), with dumb-buffer open truck and hired N.S.W.R. HFA suburban car, on No. 2 Bridge, 70 chains south of East Greta Junction. No. 1 was formerly New South Wales Railways' No. 6N (see December Bulletin—the illustration with this article showed No. 6N near East Greta No. 1 Colliery). (Photo. from reader A. H. Dunstan, courtesy Superintendent S.M.R.)

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NO V.R. FARE INCREASE

Rail fare and freight increases planned for this month have been postponed at least until July 1st, the Victorian Government has announced. Fear of political repercussions is believed in some quarters to have influenced this reversal of policy; the increases had been planned to overcome the expected deficit of £3,000,000 this year on the Victorian Railways.

N.S.W. RELIEF LINE

Work has commenced on the construction of a series of relief tracks on the Northern line, N.S.W. Railways, between Branxton, present end of double track, and Muswellbrook, centre of an increasingly important coal-mining area. Shortage of rail prevents early double-tracking of this section, and the relief line, while, in effect a second track, will use lighter rail, and will be used only by goods and coal trains. Traffic will operate in both directions on each track.

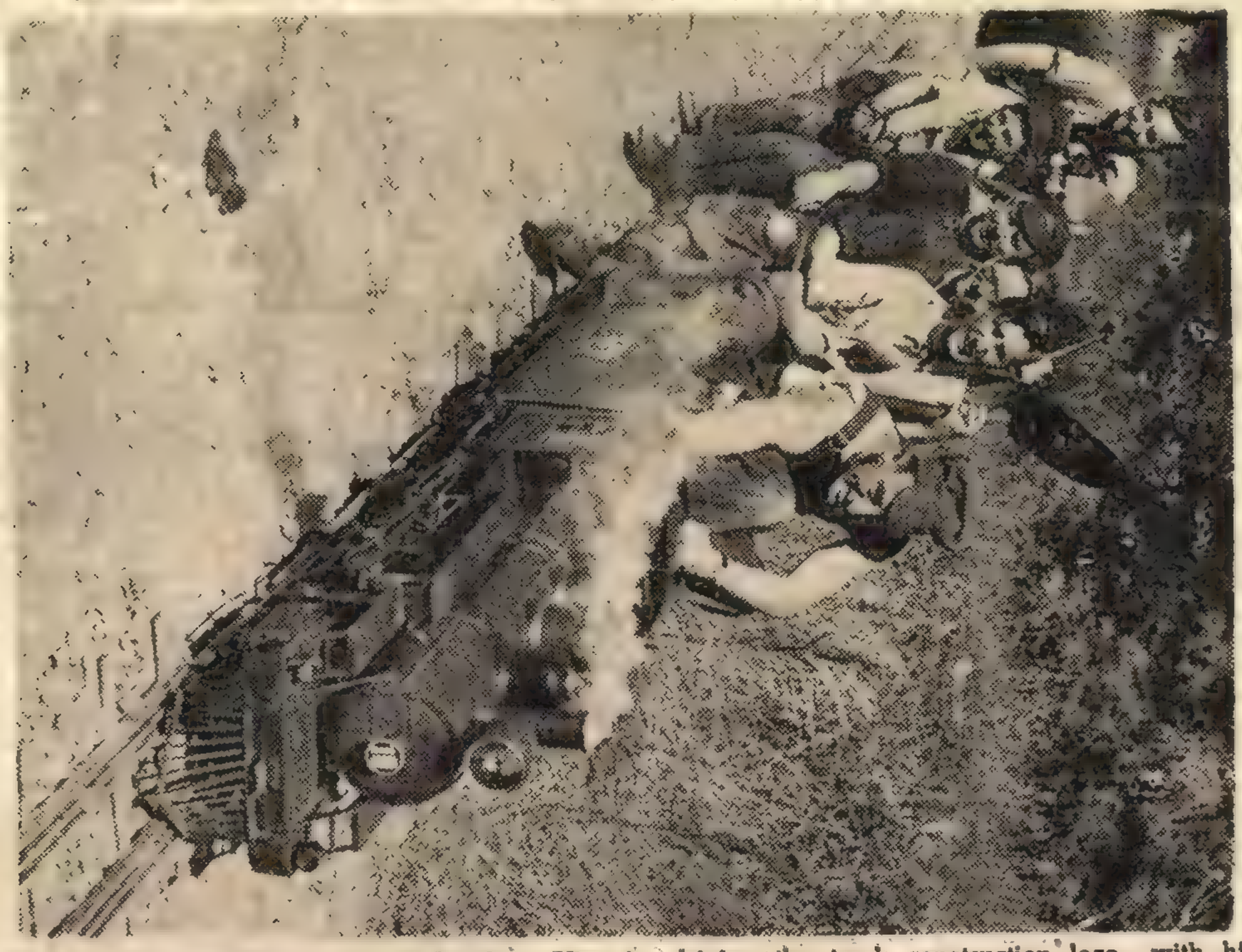
Owing to the absence on holidays of our News Editor, this section has been curtailed this month. It is hoped to have a full range of news items in our next issue. Readers can assist Mr. Buckland by sending news cuttings or advising him of any matters of railway interest as early as possible. Mr. Buckland's work is entirely honorary, and in his spare time, and any assistance would be appreciated.

S.M.R. STRIKE

Salaried officers of the South Maitland Railways, a private system near Newcastle, which carries passenger and heavy coal traffic, brought all traffic to a standstill on February 23rd, when they struck over a seniority issue. The stoppage continued for some days. A further stoppage on the same issue early last month was averted at the last minute.

Victoria: On Sunday, January 23, Miniature Electric Staff working was substituted for large-type Instruments on the Warragul-Darnum and Darnum-Yarragon single line section of the Eastern (Gippsland) main line. At the same time the Staff-locked siding at Nilma was altered from a large-type Staff Lock to Miniature Staff Drawer Lock.

To ensure prompt publication, news items should reach Mr. Buckland not later than the first week of each month.



Mr. Clement Meadmore, of Ivanhoe, Victoria, driving the track construction loco., with his volunteer helpers, on the mile-long 7½ in. gauge scenic miniature passenger-carrying railway which they are building at Chelsworth Park, Ivanhoe. The line will be operated free of all expenses to aid any worthy charity, and it is hoped to have it completed in time for opening by His Majesty the King, when he visits Australia next year. A dozen business men, friends of Mr. Meadmore, are devoting most of their spare time to this venture, which will be unique in that it will be the only miniature railway in the world running purely for charity.

This interesting line has exactly half the dimensions of the famous Romney, Hythe, and Dymchurch Light Railway, in England, by which it was inspired. The high cost of construction prevented the building of a similar line here.

Mr. Meadmore is to be commended for his venture, and for the way in which he has overcome the many unforeseen difficulties which continually crop up. Costs have been particularly heavy, the Heidelberg City Council having decided not to bear the cost of constructing earthworks, as had originally been thought possible.

(Block supplied by Melbourne "Argus.")

Railways in Australia
and
A.R.L.H.S. BULLETIN
The Magazine about Australian Trains

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Vol. II, No. 5 MAY, 1949

NARROW-GAUGE LUXURY
A Glimpse of South Africa

This interesting glimpse of travel in the "Blue Train" of the South African Railways is an extract from H. V. Morton's "In Search of South Africa," and was forwarded by Mr. J. Buckingham, of Adelaide, S.A. It affords a stimulating view of the possibilities of narrow gauge, and of rail transport generally to a degree not yet established on any railways in this country, where similar difficulties of terrain and sparse population apply.

It was a train of great splendour, and finer than any train running in Europe to-day, and as fine as the best the United States can boast. It was a train of blue sleeping coaches and restaurant cars, each coach, even each compartment, air-conditioned, as I discovered when I found it possible to raise or lower the temperature by moving a little chromium switch above the bed.

South African railways, airways, harbours, and all forms of public transport are owned by the State. The guards, restaurant car attendants, and the coloured men who make up the beds at night, are a good advertisement for the Union, for they are the most polite public servants you will find in a day's march.

The railways are unusual, because their rolling stock, of normal size, does not run upon the European gauge of 4 ft. 8½ in., but on a narrower gauge of 3 ft. 6 in. This gauge has been dictated by the enormous distances to be covered, and by the mountainous nature of the Cape and Natal, and the example has been followed by most of the railways in Africa.

I went along to the observation car after lunch. We were now running through a country of clear-cut distances, broken by low ridges and detached kopjes, or hills. Cattle grazed and horses cropped the thin grass that grew on the parched soil. The red roads ran for miles beside the track, and then struck off, across country, to the sky . . .

We came to a line of blue gum trees and a station. In the shade of the trees were American cars, Cape carts, and waggons. Upon the platform was a crowd of white South Africans and black South Africans. They were on the same platform, but on different parts of it. The natives had collected at the far end, near the locomotive, where they knew the "natives only" coaches would be; the Europeans were together elsewhere. There were station benches and lavatories labelled for black and white, and thus I learnt again the first lesson of South Africa . . .

Another interesting feature of this station, and of all stations in the Union, was its interest in altitude for, beside the name of the station, was printed its height above the distant ocean. I saw that we were four thousand feet above sea level.

Away we went into the sunlight and the wide spaces of the veld, and I looked at this country and knew that its attraction was two-fold; its colour, which is the red of the roads, the green and gold of the grass, and the blue of the distance, and its resemblance to the sea; for the eye is constantly roving to the horizon, as at sea, searching and probing into the distance and finding there refreshment, peace, and freedom. So we ran on our long way to Cape Town, into the heart of a burning afternoon . . .

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DOING
WHAT THE RAILWAYS ARE
RAIL NEWS FROM ALL PARTS OF AUSTRALIA
Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

N.S.W.R. MAINLINE ELECTRIFICATION

Beyer-Garratts for Steam Haulage?

Faced with record passenger and freight traffic, which shows no sign of abating and every sign of further rapidly increasing, the New South Wales Government Railways are desperately short of high-capacity motive power capable of dual service operation over existing tracks.

Engines of classes C-38 (Pacific) and D-57 (Mountain) are restricted to existing "heavy rail" main line sections, and D-58 class 4-8-2's now under construction will be similarly restricted owing to axle loading. Within the time limit and under existing industrial conditions in the Commonwealth design and construction of a new dual service high-capacity steam locomotive with an axle loading under 16 tons is impossible of achievement. Attention was therefore directed to possible overseas sources of supply, and with the long range view of likely track conditions within the next ten years, an articulated design was the obvious answer. Beyer, Peacock and Co. have been approached with a view to design and construction of at least twenty 4-8-2 + 2-8-4 Beyer-Garratt locomotives with an axle loading not exceeding 16 tons, and a capacity at least equal to that of the heavy D-57 and D-58 freight engines, but suitable for dual passenger and freight service over all main lines and many secondary lines. We understand that the proposal has been recommended to the N.S.W. Government by the Department for urgent action.

ELECTRIFICATION.

Associated with this proposal is the decision of the Department to proceed immediately with the electrification of the Western Main line over the Blue Mountains to Lithgow, 96 miles from Sydney.

Australian Standard 1500-volt D.C. overhead catenary system will be employed using electricity generated at the Railway power stations at White Bay (Sydney) and Lithgow. Complete electric operation of both passenger and freight trains would supplant steam operation, including helper engines. Some 350 single track miles of main lines and sidings would be wired, and large electric locomotives suitable for multiple-unit

Reproduced by kind permission of the Melbourne "Age," this view of the Victoria Dock, Melbourne, includes an interesting and diverse line-up of Victorian Railways' freight rolling stock. Also to be seen are a number of "foreign" vehicles from South Australia. Note that CE-type passenger brake van in the centre foreground.

dual service would be employed. They would employ regenerative braking.

The expected increase in coal traffic from the Western field alone within the next five years is over 1½ million tons per annum. The Department plans to handle this coal traffic in a fleet of (initially) 2,000 40-ton capacity bogie hopper cars at present on order. The Joint Coal Board, in collaboration with the Railways Department and the N.S.W. Maritime Services Board, plans establishment of modern coal shipping plant at White Bay, on Sydney Harbour, for shipment of Western coal interstate. Electrification and the change-over to high-capacity coal cars and modern handling methods are essentials to the national plans for expanding coal production.

The N.S.W. Minister for Transport (Mr. O'Sullivan) recently announced that the Government intended to electrify over 900 track miles — the main lines to Lithgow, Newcastle, Port Kembla, and Goulburn — at a cost of between £20 and £25 millions, to be undertaken over the next ten years. Present plans of the Department, however, are for immediate electrification of the Western line only.

More Private-Owner Cars In N.S.W.

Apart from the large number of privately-owned colliery coal hoppers registered by the New South Wales Government Railways, there are large fleets of other private owners' freight cars, some of which are regularly worked over Government lines. These include tank cars owned by the various oil companies, B.H.P. Co., Sulphide Corporation, etc., and various other types of vehicles. Latest industry to enter this field is the Southern Portland Cement Company, which has a limestone quarry at Marulan, and works at Berrima, in the Moss Vale district. Because of restrictions on cement transport and lack of freight cars, this company (like other cement producers in N.S.W.) has had to depend on costly road transport for much of its raw materials and finished product. At the annual meeting of the company in March, the chairman (Mr. C. H. Hoskins) announced that the company would in future provide its own railway freight cars for both limestone haulage from Marulan to the works and cement for distribution throughout N.S.W.

NSWR Take Over P.W.D. Port Kembla Network.

Effective from January 1 last, the New South Wales Government Railways have taken over control and operation of the network of lines and sidings at Port Kembla, formerly owned and operated by the Public Works Department with its own engines. A survey of the railway facilities in the area is at present being undertaken with a view to reorganisation and simplification. For the present, former P.W.D. engines and staff are continuing to operate the system as before. For some years a number of N.S.W.G.R. engines have been on hire to the P.W.D. and during a recent visit the following were noted as working on the former P.W.D. lines: 1801, 1803, 1805, and 1806 0-6-0 Tanks, 1310 4-4-2 Tank, 2019 2-6-4 Tank, and 2613 2-6-2 Saddle Tank. Several P.W.D. engines have been sent to Eveleigh shops (Sydney) for overhaul and boiler renewal, reports Mr. David Murray, of Burwood, N.S.W.

OUR COVER PHOTO.

Introducing the personal touch once again, we reproduce a picture by a Victorian Railways cameraman, showing Driver Jim Power climbing into the cab of X class loco. No. 47, at North Melbourne Locomotive Depot (a fine view of an-

(Block kindly lent by V.R.)

S.A. Rail Charges Rise.

In order to meet mounting operating expenses and threatened record deficit for 1948-49, railway charges have been increased in South Australia from March 1. Both passenger fares and freight rates have been increased; fares on a sliding scale by up to 25 per cent., decreasing according to distance; and freights by from 10 to 20 per cent., according to classification, is unlikely to bridge the gap between total revenue and increasing operational costs. Increased freights and fares originally proposed to take effect in Victoria from March 31, have been indefinitely postponed by order of the Government, which will review the position in a few months. Victorian Railways are threatened with a record deficit of several millions for 1948-49, brought about, the Commissioners claim, by the lowest fares and the second lowest (lowest since the S.A. rise) freight rates in the Commonwealth. (Restriction of train services caused by manpower and coal shortages has also reflected adversely on railway revenue earnings.—Ed.)

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BIG FREIGHT TRAFFIC INCREASE ENVISAGED.
Hydro - Electric Schemes.

Decision of the Commonwealth Government to proceed immediately with the first stage of the 25-year programme for development of the hydro-electric potentialities of the Snowy and other rivers in the alpine regions of south-eastern New South Wales, coupled with the Victorian State Electricity Commission's Kiewa hydro-electric system, now under construction, will result in vast freight movements of construction materials, electrical equipment, stores and supplies over various railways. Some additional railways may, indeed, be constructed for the purpose, as will be the case with the Kiewa scheme in north-eastern Victoria.

For this one construction task alone some 300,000 tons of materials will be moved by railway into the area during the next three-five years. By negotiation with the Army Department, the S.E.C. has acquired warehouses and dump sites served by both standard and broad gauge tracks at Bandiord (near Bandiana, on the Cudgewa line), where additional sidings and facilities will be installed. For transport of approximately 120,000 tons of cement, fifty special 50-ton capacity covered hopper cars are being designed by the V.R. for direct service between the Fyansford (Geelong) works of Australian Cement Ltd., and Bandiana, where a silo and handling equipment will be provided by the S.E.C. for transfer to special road vehicles for movement to the construction sites. After this special traffic has ceased, these cars will be modified for the Yallourn briquette traffic. Other principal items to be railed to Bandiana include 30,000 tons of electrical switchgear and transmission pylons, 30.000 tons of fuel oil and petrol, and 12,000 tons of rails and sleepers for construction railways.

The great Snowy scheme, which includes diversion of snow waters to the Murrumbidgee and Murray Rivers, for expansion of irrigation, will be on a vaster scale, which, without the extensive use of railway transportation, would be almost impossible of achievement.

T.G.R. ORDERS NEW STEAM LOCOS.
Two British Builders.

At a total landed cost of £550,000, the Tasmanian Government Railways have placed orders with two British builders for eighteen steam locomotives of two types — eight heavy 4-8-2's with 27,450 lb. tractive effort from Vulcan Foundry, and ten medium 4-8-0's with 21,000 lb. tractive effort from Robert Stephenson-Hawthorns Ltd. Delivery is to be made by December, 1950. in one vessel specially chartered for the purpose. No further particulars are at present known.

South Coast Mines Modernize Railways.

Privately-owned railways serving pits on the South Coast of New South Wales, particularly those owned by Australian Iron and Steel Ltd., are being rebuilt and modernised as part of that company's plans for fully mechanising its collieries. Bulli Colliery is to have a new underground transport system of 3 ft. 6 in. gauge railway track, over which 25-ton diesel locomotives will haul high-capacity bogie coal skips. These locomotives have Gardner diesel engines, and are built under licence from the Drewry Car Company in Australia, by Malcolm Moore Ltd., Port Melbourne, Victoria. Two have already been delivered to Bulli, together with a number of all-steel skips, many of which are being built by Thirlwell and McKenzie, engineers, Port Kembla. A new screening and loading plant will be built for transferring coal into A.I. & S. hopper cars for haulage to their Port Kembla works over the N.S.W.G.R. The new Bulli Colliery railway connection will span the Princes Highway and the main Illawarra line by overhead crossings.

The other main A.I. & S. c[illegible] — Mt. Keira - Mt. Kembla — are being connected by a long tunnel — Kemeira (lately much in the nation's news) — through which a 3 ft. 6 in. gauge diesel locomotive-operated railway will haul coal which will be screened and loaded direct into A.I. & S. trains from Nebo Colliery (lately Mt. Kembla Colliery) for haulage to Port Kembla. The former Mount Kembla Colliery line is being strengthened and reconstructed to cross over the Princes Highway and the Illawarra line to eliminate the present level crossings near Unanderra, where an A.I. & S. line leads from the steel works network.

Between Unanderra and Wongawilli Junction, A.I. & S. trains have running powers over the single track N.S.W.G.R. line. The company's B-class heavy 0-6-0 Saddle Tank locomotives (in pairs) and "Iron Duke" 4-6-4 Tank are authorised to haul up to 540 tons in coal trains over this section.

NEW LOCOS. FOR CANE TRAMWAYS.
S.A. Firm Builds Twenty.

Mr. George Bond, our Brisbane correspondent, advises that several 2-ft. gauge steam locomotives have already been built, or are on order by various North Queensland sugar mills, from the Adelaide works of Perry Engineering Company. The March, 1949, issue of RAILWAYS IN AUSTRALIA reported some seventeen new locomotives on order; however, further advice reveals not all of these will be built by Perry Engineering Co. The following is a list of Perry steam locomotives either working, or on order for North Queensland sugar mill tramways:—

Mill	In Operation	On Order
Kalamia	Two 0-6-2 T	One 0-6-2 T
Proserpine	Two 0-6-2 T	—
North Eton	One 0-6-2 T	—
South Johnstone	One 0-4-2 T	Two 0-4-2 T
Millaquin	One 0-6-2 T	—
Pioneer	One 0-4-0 T	Two 0-6-2 T
Inkerman	One 0-4-2 T	One 0-4-0 T
Tully	—	Two 0-6-2 T
Babinda	—	One 0-6-2 T
Douglas Shire Tramway	—	Two 0-4-2 T

Thus a total of nine Perry engines are already in service, with eleven more on order. Perry Engineering Co. (which absorbed the famous South Australian locomotive works of Jas. Martin, Gawler) are at present the only Australian builders of light steam locomotives, although the Bundaberg Foundry is understood to be building standard light line locomotives in association with John Fowler (Leeds) Ltd. The standard Perry 0-4-2 Tank weighs 17 tons roadworthy and the larger 0-6-2 Tank 19 tons.

NEWS ITEMS IN BRIEF.

Queensland: On the Wallaville sugar mill tramway (near Bundaberg) there is a low level bridge over the Burnett River with a funicular arrangement by which loaded cane trucks descending the river bank haul up empties on a parallel track. At the mill bank, steam locomotives are used to haul cane trucks up a gradient of approximately 1 in 5 — the load being an average of two trucks per trip! On one occasion last year, an engine ran away down the bank on to the bridge, but fortunately did not capsize into the river, writes Mr. Ken Rogers, our Brisbane

Continued on Page 20

THE WAITING ROOM—
Letters to the Editor

The Editor,
Railways in Australia,
Dear Sir,

As an admirer of the broad gauge, I should like to congratulate J.B.G. on his excellent comments on the Australian Standard Gauge in your March issue. I also fail to see why we should slavishly follow the alleged "standard" of 4 ft. 8½ in., when the extra 6½ in. of the broad gauge is so desirable.

It also seems oddly ironical that South Australia and Victoria should now have to convert to the New South Wales gauge when it was New South Wales which contributed so much to our present mess by diverting from the original Australian Standard Gauge of 5 ft. 3 in. agreed upon by the three states.

Remembering this past, it is strange to read in the daily press that the New South Wales Government is quibbling over their contribution to this vital work; if anyone has the right to complain, it is Victoria.

Yours, etc.,
A. D. LOCKYER.

Barmera, S.A.

The Editor,
Railways in Australia.
Dear Sir,

I wish to congratulate you on your production, and wish you an even better and brighter future. I was particularly pleased to note that the railways of Queensland are receiving their share of space. This is interesting to me of the North, and I can understand that to adequately portray the railways of the northern part of Australia requires extra work for staff due to the paucity of railway material made available to the general public.

There are one or two small points of criticism I should like to raise in your October issue. First is regarding new Queensland rolling stock on page 4; in which you refer to waggons and carriages as cars. Now in Queensland, a goods vehicle on the railways is a "waggon." That is the correct official term, and this may be easily checked by looking up official railway forms and literature. The term "gondola car" es-

(Cont. on Page 18)

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post

L. G. FARMER, Penguin, Tas.—Your contribution being held until space available to do it justice. Mr. Christian has retired, but others remember you — Mr. Nougher, sends regards.

J. L. SOUTHERN, Port Kembla, N.S.W.—Using the amended article as soon as possible; thanks for taking this trouble. Instructions re T.T. sub noted.

A. H. LANE, Ivanhoe, Vic.—Have passed on your letter to our Question Box editor. To him, the headache!

R. BOLAND, Middle Creek, Qld.—Printing as much of your letter as space will allow. Other material perused, and we should like to publish some, although we cannot agree with many of your contentions. Space is the problem here, too. By the way, although the American locos you mention do travel at 70 m.p.h., negotiate heavy gradients, and haul 15,000 tons, they do not do all these things at the one time — that loco has yet to be built!

P. J. HONEYMAN, Gympie, Qld.—Initials right this time — apologies for misnaming you previously! Plan to use prints next month, thanks; they certainly are good for 127 film. As regards composition, although loco shed picture is attractive, less fence would improve engine detail scope.

J. SIMPSON, Asquith, N.S.W.—Thanks for cutting. It's a grand scheme, but I can't help feeling sceptical, having once planned to live at Berowra on the assumption that a similar scheme, announced in 1937, would be carried out! More diesels and petrol-electrics in this issue. Buninyong line not now in use beyond Eureka. No V.R. country time-tables have been issued for some time, unfortunately.

Question Box

Arrangements have been made for our Question Box to be handled by a well-known A.R.&L.H.S. member. Questions on any aspect of Australian railway operation may be forwarded; address envelope to "Question Box," c/o Traction Publications, 29 Seymour Gr., Brighton Beach, S.5, Vic. It is regretted that direct answers cannot be posted to correspondents.

Mr. F. S. CATTERALL, Victoria Park W.A., asks the road numbers of the V.R. railcar and trailer in which he travelled from Daylesford to Spencer Street on February 12th.

ANSWER: It would be setting far too thorny a precedent to find the precise answer to this one. Even though the numbers on the new V.R. diesel railcars are rather hard to spot — just above the rear bogie — who should know the answer to a question like this better than a railfan who made the trip? Since October 18th, 1948, the Daylesford service has been run by one of the new 153 h.p. Walker diesel railcars with trailer. By Easter, at least five were running, but in early February, only the first three (20RM to 22RM) had yet been placed in service.

Mr. A. MAKY, Milton, Qld., asks: Can you tell me the loading gauge limits which exist on all Australian railways at present, and what will be the standard limits after standardisation?

ANSWER: Checking the facts on the first part of the question is holding up the answer, but something should be ready by next issue. The answer to the second part is that the standard limits after standardisation are still under discussion between the various railway authorities at interstate conferences, and no definite agreement has been reached.

NOTES: Mr. R. Barker's question on pre-1923 loading gauge figures has also to be held over until further details come to hand.

Meanwhile, there is a slight correction to Mr. Barker's query on the cut-away buffer faces on some V.R. and S.A.R. locomotives. The reason is to prevent fouling with the bottom of the end-stiffening girders behind the vestibule connection on certain auto-coupled passenger cars — not the vestibule connections themselves.

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Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Region) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

Rolling Stock Parade

STANDARD PETROL ELECTRIC RAILCAR, No. 57RM, of the Victorian Railways. These efficient cars often haul trailers of similar design, sometimes with a standard passenger car or van as an additional load.

(Block kindly lent by Victorian Railways.)

A VANISHING RACE — the A.E.C. rail motors, so long a feature of many Victorian branch lines, are disappearing with the introduction of modern Walker railcars, one of which can be glimpsed in the background. Don Wishart snapped this scene at Jolimont Car Shops, Melbourne.

(Continued from Page 7)

pecially has no meaning here. I know that this is a small point, but I think we should always adhere to our own terms when dealing with technical subjects, and not import them from outside.

82. I haven't seen her for about two years, but until that time I always thought the number was 204. I have a photo of her beside me now which I took a Mayne in January, 1947, showing plainly the number 204. Incidentally, this is, I think, the only Prairie tender engine running within the Commonwealth.

The little B9½ shown on the same page, was built by the well-known firm of John Fowler & Co., Leeds, and belongs to what must be one of the very few classes of tender engines of this wheel arrangement (0-6-2) in the country. I know the type quite well, having seen them often. They regularly handle nett loads of 195 tons, which is not bad for an engine weight of around 14 tons, on the steeply-graded Innisfail Tramway. In case readers are interested, further details are as follows:—

Q.R. B9½ (2-feet gauge) class; cyls., Q.R. B9½ (2-foot gauge) class; cyls., 9½ x 14 in.; boiler pressure, 180 lbs.; heating surface (firebox), 34 sq. ft.; (tubes), 300 sq. ft.; grate area, 6.3 sq. ft.; rigid wheel base, 5 ft. 9 in.; total wheel base, 11 ft. 6 in.; driving wheel diam., 2 ft. 4 in.; maximum load at 10 lbs. per ton (level), 594 tons, (1 in 40), 77 tons.

Yours, etc.,
E. M. LOVEDAY.

Mossman, Qld.

(Glad to know at least one Australian system has a standard nomenclature! In Victoria, they are known as waggons, trucks, and vans; in New South Wales all these names apply, as well as the term "cars"; in South Australia, "car" is more or less standard, and the term "gondola" has official status. For passenger stock, most systems use both "car" and "carriage." No. 204 is correct for the Q.R. 2-6-2; 82 is the Builder's No. — a hastily-written caption is to blame. —Ed.).

OUR RETAILERS

"Railways in Australia" can be obtained from a number of retailers and arrangements are being made for nation-wide distribution. Place a standing order now, or, if this is not yet possible, send a subscription direct to the publishers, TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5, Victoria.

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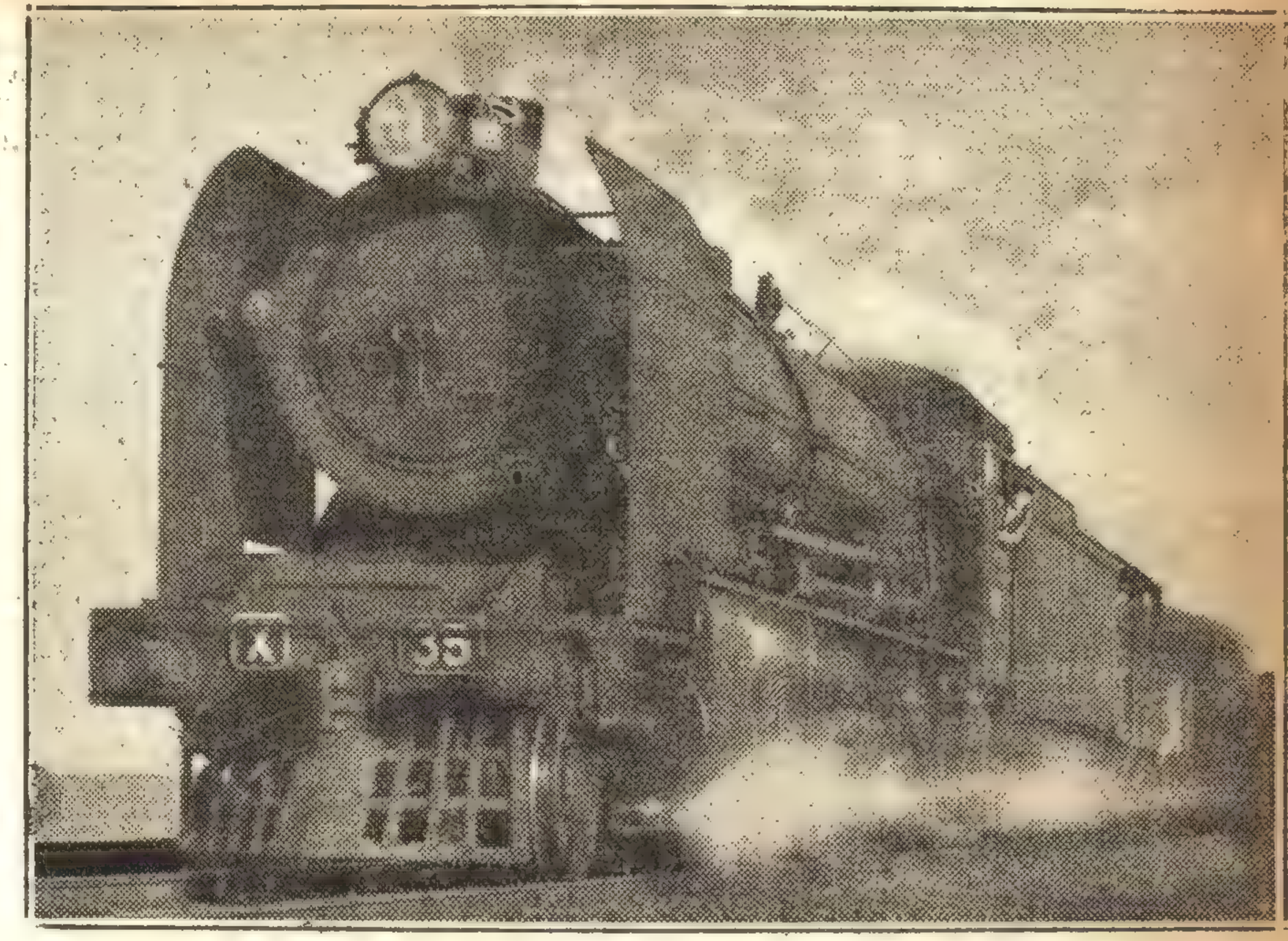
The opinions expressed by contributors to "Railways in Australia" are not necessarily those of the publishers, nor of the Australasian Railway and Locomotive Historical Society. The Society does not accept responsibility for any matter not contained in the "Bulletin" section.

Engine Pictures



VICTORIAN RAILWAYS' X-class 2-8-2 heavy freight locomotive, No. 35. These engines can be seen sometimes at the head of passenger trains, but a 50 m.p.h. speed limit hinders their effective use in this sphere.
(Block kindly lent by Victorian Railways.)

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

Only span poles and overhead are lacking to complete the resemblance of the Camden branch of the New South Wales Railways to a typical American interurban line of the older type. In fact, the branch was formerly worked by tramway rolling stock. This month's favourite photo. is the work of Roy Field, Sydney, N.S.W., and, to use his own words, shows: "The Spirit of Freedom" — No. 2028, after racing down from Narellan to lend a hand in piloting 2026 on 12.05 mixed ex-Camden with three trucks, MLV 96, and car CAA 1277. (Locos. are N.S.W.R. Z20 class 2-6-4T, with inside cylinders.—Ed.)

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park. Addresses will be found on page one.

bridges, instead of the present level correspondent, who visited Wallaville recently. Several of the new suburban passenger cars on order from Commonwealth Engineering Co. have been delivered to Q.G.R.

New South Wales: When the new air-conditioned Cessnock Express began running, it was at first anticipated that the load would be beyond the capacity of a 30-class tank locomotive between Broadmeadow and Cessnock on existing timetables, although tests have shown this to be fallacious. Plans were being made, therefore, to use the 38-class engine through to West Maitland, and there to attach instead one of the South Maitland Railways' fine 10-class 2-8-2 mineral tank engines for the run to Cessnock. The 38-class locomotive was to have been worked back to Broadmeadow tender first on a coal train, and out tender first with an empty coal train to take up running, writes Mr. David Murray, of Burwood, N.S.W. He remarks on how interesting this working would have been had it occurred! (The line from East Greta Junction — near West Maitland — to Cessnock, 16 miles, is owned by a private company — South Maitland Railways Limited, who work all coal traffic with their own motive power. Formerly they ran their own passenger trains, until in 1929 the N.S.W.G.R. were granted "running powers," and have since operated through passenger services from Newcastle and more recently from Sydney, with their own engines and cars following destruction of the S.M.R. passenger stock by fire.—Ed.)

A new station named **Towradgi** at mileage 48 m. 39 ch. (between Corrimal and Balgownie) on the main Illawarra line was opened for traffic on December 18, 1948. Mechanically-operated boom gates have been in operation at North Port Kembla level crossing, together with warning lights since December 15, 1948. New private sidings have been opened as under:—Thirlwell and McKenzie's siding, Port Kembla, 26/2/48; Australian Fertilisers Ltd. siding (ex No. 7 Commonwealth Siding), Leightonfields (Metropolitan), on 20/12/48; Australian Forge and Engineering Co. siding at Pippita (Metropolitan), on 29/12/48; Newdell Colliery siding at 166 m. 14 ch. (Main North), near Liddell Colliery Junction, on 13/1/49; Meatworks siding (and altered junction arrangements), at Joppa Junction (South), on 8/12/48.

The former Distant signals at Humula (Tumbarumba line) and Beckom (Temora-Griffith line) were removed and replaced by Landmarks during January, 1949. The down refuge siding at Ourimbah (North) was extended and converted into a loop siding in November, 1948. Nooroo (North Coast) was closed as a crossing loop and Staff station on 10/1/49, and the Staff section is now Stroud Road-Monkerai. Stockinbingal West Fork (connecting from Forbes line towards Griffith) was dismantled on 13/1/49, whilst the connection with the A.I. & S. Nebo Colliery private line at Mount Kembla Box was removed on 11/1/49. Rookwood Cemetery Branch (Metropolitan) was dismantled (except for portion retained as a siding) on 29/12/48. On 22/12/48 a new platform halt named Yumbunga at 196 m. 50 ch. on the North Coast line was opened. N.S.W. pattern revolving-arm highway signals were installed at level crossings at Narellan (on Camden line) and Cumnock (Molong-Dubbo line); the latter replacing a "Wig-wag" signal, during the latter part of 1948. The old 60 ft. turntable at Gosford (North) has been replaced by a 75 ft. model. Engine 3060 was fitted with a superheater in January, 1949. In recent months, electric headlights have been fitted to the following engines: 5490, 5585, 5466, 5609, 5345, 5549, 5424, 5575, 5543, 5599 and 3132.

To cope with traffic requirements on the Main Western line, any two superheater 50-class, or 53 and 55-class engines have been authorised to haul a maximum trailing load of 1,260 tons from Orange East Fork Junction to Lithgow, subject to a vehicular limitation of 46 and with assistance in the rear from Bathurst to Raglan. New sectional running times for these loads have been published. On the Main South new sectional running times for trains worked by 57-class engines subject to a speed limit of 40 m.p.h. have been published. These engines are authorised to haul 685 tons from Enfield to Goulburn, and 575 tons Goulburn to Harden, unassisted, subject to a vehicular limit of 55. Northbound, 1,000 tons can be hauled from Menee to Moss Vale, and 1,500 tons thence to Enfield, subject to vehicular limit, at increased speed.

State Electricity Commission of Victoria: For service on the new railway extensions planned in association with the Morwell open cut, the Commission is seeking bids for supply and manufacture of seven additional standard B + B type electric locomotives for 90 cm. gauge, also 20 (or, alternately, 45) side-discharging 32 cu. yard, bogie overburden cars fitted for air-dumping. An order for additional gable-bottom side-discharge coal cars of 20-tons capacity has already been let to Thompsons Engineering Pty. Ltd., Castlemaine, Victoria.

Tasmania: The first four of eight additional A.S.G. locomotives for the Tasmanian Government Railways have been landed at Hobart. They are Nos. G-9, G-19, G-25, and G-11; overhauled and modified at the Rocklea (Queensland) works of Evans, Deakin Ltd. The first two former South Australian Yx-class 2-6-0's purchased from Commonwealth Disposals Commission (ex North Australian Railway) went into service in February and March, respectively, as F-class, Nos. 1 and 2. They were formerly Commonwealth NFB-class, Nos. 96 and 94, respectively.

South Australia: The six former narrow gauge T-class 4-8-0 locomotives (Nos. 275-280 inclusive) converted to Tx-class broad gauge engines about 1923 are to be reconverted back to narrow gauge because of the motive power shortage, particularly on the Northern and South-East sections. This must surely constitute something of a record for rebuilds!

AUSTRALIAN TRAMWAY ALBUM.

It is regretted that, despite the optimism reflected in our advertisements, difficulty is still being experienced in bringing out this book. This is causing us no little embarrassment, not only in respect of the many readers who are waiting for their copy, but also from the financial viewpoint, a very large sum having been expended on the production to date. In view of past disappointments, we shall not attempt to estimate a date, but copies already ordered will be despatched as early as possible, and no further announcement will be made until the book is actually finished and ready.

INCREASED PRICE.

Owing to the greatly increased costs —half-tone blocks, for instance, are up 20 per cent. — since the original announcement, the price of the album has been increased to six shillings (6/-). **All subscriptions at the old rate will, of course, be honored** (up to 30th April for Australian subscribers — 30th June for those overseas).

CLASSIFIED "ADS"

Small commercial advertisements under this heading will be inserted. Charges are 3/- per inch for one insertion or 25/- per inch for one year.

Closing date for advertisements is the 15th day of each month.

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Railways in Australia
and
A.R.L.H.S. BULLETIN
The Magazine about Australian Trains

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Vol. II, No. 6 — JUNE, 1949

BALANCED WHEELS
For Passenger Cars

By Paul J. C. Friedlander.

Reprinted from an American newspaper cutting sent in by one of our readers, this article gives an idea of efforts being made to improve even further what are already the world's finest railways.

The nation's railroads, seriously concerned with airline and bus competition and with a downward trend in passenger traffic volume, are studying ways of taking the thumps and bumps and sidesway out of their passenger cars in order to achieve the smooth ride on "ribbons of steel" that both the travelling public and the railroads have been looking for.

Tests completed recently by the Association of American Railroads have led railroad men to look to balancing of train wheels as a major contribution, and an economical one at that, toward improving riding comfort. Railroaders who participated in and observed the tests are of the opinion that A.A.R. engineers, now compiling their report for publication about Jan. 1, will recommend that wheel balancing be universally adopted.

Since A.A.R. recommendations and A.A.R. standards are generally accepted by American railroads as directives, it is likely that, should the report advise wheel balancing, the smoother, more comfortable ride a balanced train gives will be available soon, possibly some time in 1949.

Weight Distributor

A balanced wheel is, simply, one that is not only as nearly round as a wheel can be machined, but one whose weight is distributed equally throughout. Because of variations in the density of the steel from which it is forged, and because of possible variations of pressure in the forging, a train wheel that is absolutely symmetrical can still be heavier in one spot than in another.

This means nothing to the passenger, and little to the railroad, until the wheel starts to revolve at high speeds. A table compiled by the Bear Manufacturing Company of Rock Island, Ill., a pioneer in balancing of automobile and train wheels and all kinds of revolving machinery, shows that a standard railroad wheel one pound out of balance at 200 r.p.m. (about 21 m.p.h.) creates a centrifugal force of nearly 25 lbs.

In the same wheel at 60 m.p.h. (560 r.p.m.) the imbalance generates centrifugal force of 161 lbs.; at 85 m.p.h. (800 r.p.m.) centrifugal force rises to nearly 330 lbs.; and at 100 m.p.h. (934 r.p.m.) the one-pound imbalance creates 447.2 lbs. of centrifugal force.

(To be continued)

Photos. Wanted

BUT READ THIS FIRST!

We urgently require vertical prints of railway photos. suitable for our cover pages. At present we have only N.S.W.R. prints suitable for this — what about the other States? Please note that horizontal prints are of no use, unless they can be trimmed to suitable shape. All prints must be sharp and clear, and capable of being enlarged. Small contact prints are not required.

Also wanted are railway photos. generally from W.A., Tasmania and the Northern Territory, particularly the latter. Thanks to our readers' good response, we have plenty from other States at the moment.

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

ELECTRIFICATION URGED FOR GIPPSLAND

Alternative to Duplication?

Immediate implementation of the Victorian Railways plan for the electrification of the existing 103 track miles of main line and sidings between Dandenong and Traralgon, at an estimated cost of £1,950,000, has been recommended by the Parliamentary Public Works Committee, which has been investigating the proposal. An early Government decision is expected following approval of the Committee's report by the Executive Council, on March 12.

In its enquiry, the Committee was asked to determine the additional facilities required on the main Gippsland line to handle future brown coal, general freight and passenger traffic resulting from the industrialisation of the Latrobe River Valley, and probable development in East Gippsland. The Committee was specifically instructed to report upon the necessity and desirability of duplication and/or electrification.

A progress report, issued last year, recommended the immediate duplication of the difficult 18 mile section from Longwarry to Yarragon, together with extensive relocation, and regrading to reduce the ruling grade against Up trains from the present 1 in 50 to 1 in 110. This work is at present being energetically carried out at an estimated cost of £760,000. Associated works, not yet undertaken include reorganisation of Warragul and Dandenong yards and provision of refuge sidings at Spring Vale to cost an additional £18,000.

Electrification, rather than complete duplication, is favoured by the Committee for the following reasons:—

- Increased operating speeds as compared with steam traction will materially increase track capacity.
- Electrification will "pay for itself" from the start, whereas the savings resulting from duplication will not pay for the capital investment involved.
- Refuelling, watering and fire cleaning en route and at terminals will be eliminated, as will turning, resulting in greater availability of motive power.
- Electric locomotives could make 2½ round trips per 24 hours between Melbourne and Morwell, as against 1½ by steam locomotives.
- Seventeen electric locomotives would be sufficient to handle all anticipated traffic increase up to 1959 as compared to 27 steam locomotives (of unspecified type).
- Electric locomotives would be suitable for dual service and require less maintenance than steam, besides substantially reducing black coal consumption.

That some of the Committee's conclusions are fallacious in the light of development of really modern steam locomotives (and diesel-electrics) is quite obvious. However, comparisons can only be drawn in this instance between present (and likely immediate future) operating conditions, which preclude the use of more than medium capacity steam locomotives of relatively antiquated design.

This financial year the Victorian Railways will be required to haul 450,000 tons of raw brown coal and 530,000 tons of briquettes from Yallourn. By 1953-4 this will reach 650,000 tons of raw coal and 600,000 tons of briquettes. Recent advices suggest that the first unit of the new Morwell briquette factories will be in production by the end of 1952 — two years ahead of schedule. This will further complicate the railway transportation problem. By 1958-9 Yal-

Typifying present methods of brown coal and briquette haulage from Yallourn to Melbourne is this "Age" view of a coal train approaching Jolimont Yards; the loco. is an A2 class 4-6-0, No. 901. In a recent nine-month period, the Victorian Railways brought 412,802 tons of briquettes and 326,392 tons of brown coal to Melbourne, using 26,384 trucks; this total was 200,000 tons more than for the same period in the preceding year. (Block lent by Melbourne "Age.")

lourn output will be stabilised at 550,000 tons of briquettes only, whereas Morwell output will be 1,210,000 tons. The Department's Transportation Branch states that the train frequency in each direction daily (exclusive of Sundays) to handle this year's brown coal, briquette, general freight and passenger traffic is 15 trains, rising to 21 daily in 1958-59.

The report states that the annual savings resulting from electric operation will be approximately £130,750. In the event of the plan being implemented, electric locomotives, suitable for multiple-unit operation, would be purchased from Britain. Running times of express passenger trains between Melbourne and Traralgon (97½ miles by present mileage), would be cut from 190 to 130 minutes. Running time of electrically-hauled freight trains from Melbourne to Morwell would be cut by 100 minutes and 120 minutes in the opposite direction. The complete project is anticipated to take five years, but the report fails to mention from what source would come the necessary electricity supply. Under continued single-line operation, the suggested savings in running times might well prove more theoretical than real.

N.S.W. Garratts to be Nation's Most Powerful Locos.

As forecast in "RAILWAYS IN AUSTRALIA," the New South Wales Government Railways have ordered twenty-five Beyer-Garratt articulated steam locomotives from Beyer Peacock & Co., Manchester, at a cost of £A1,695,062. Unless the Commonwealth Government agrees to forgo payment of customs duty, the total landed cost will be £469,625 higher.

Decision to adopt Garratt type locomotives has been influenced by present and anticipated future track conditions; also the early electrification of the Western line, possibly to be followed later by the Newcastle line. The order was placed overseas, firstly, because of the wide experience in design and construction of this specialised type of locomotive by the Beyer Peacock organisation; and, secondly, because of the inability of Australian builders to offer reasonably prompt delivery. With gross ton mileage up by 40 per cent. since 1939, the Department is experiencing considerable difficulty in meeting traffic requirements because of existing motive power limitations, particularly on secondary main lines.

No details of the design have yet been released beyond the limitation of maximum axle loading to 16 tons, necessitating the 4-8-4 + 4-8-4 wheel arrangement. Tractive effort will be in the vicinity of 60,000 lb., making these the most powerful locomotives in the Commonwealth. Beyer Peacock will undertake the design, and delivery will commence at the rate of one a week from December, 1951.

Some controversy has resulted from the protest of the manager of Clyde Engineering Co. (Mr. R. E. Purves) that the Department had ordered the locomotives overseas without first calling tenders in Australia. The Acting Minister for Transport (Mr. W. Sheahan), replied that the Department had expressed dissatisfaction at the delay in delivery of the five C-38 class locomotives built by Clyde, hence the decision to build them and the 58-class in its own shops. Although Clyde had experience of the construction of Garratt locomotives in Australia (the Australian "standard" Garratts.—Ed.), there was a dearth of sufficiently skilled labour in this country. However, the time factor in delivery was the most important argument for placement of the order overseas.

N.S.W.R. Hauls 1500 Tons Over Mountains

A special test was conducted by the New South Wales Railways on May 5, to determine the feasibility of running 1,500 ton coal trains out of Lithgow through to Sydney. Previously through ruling grade load for a 57-class engine, assisted back and front to Zig Zag was set at a maximum of approximately 1,100 tons. On May 5, two 57-class engines, assisted from Lithgow to Zig Zag by a 32-class push-up engine in back, successfully hauled 1,500 tons to Blackheath, from where a single 57-class engine took the load on unassisted to Enfield yard. This is the first known occasion of double-heading with 57-class engines, and may soon become a regular working pending electrification of the Western line to Lithgow. Similar loads are operated over many favourable sections of main line in N.S.W., but working such trains over the formidable barrier of the Blue Mountains is a meritorious achievement, reflecting great credit on the initiative, enterprise and skill of the Departmental officers who arranged and conducted the test.

VIC. TESTING 4-8-4 ON WESTERN LINE FREIGHT

Designed originally to haul the "Overland" on the relatively heavily-graded Western main line to Ararat, Victorian Railways' sole H-class 4-8-4, No. 220 (colloquially known as "Heavy Harry"), ran to Ararat for the first time on May 5, returning May 6, hauling a 680 ton freight train behind the dynamometer car. Although nominally a passenger locomotive, this three-cylinder machine has been restricted to running fast freight trains between Melbourne and Wodonga for the past eight years, with only occasional emergency use on passenger trains. No. 220 is the largest and heaviest and nominally most powerful locomotive at present running in the Commonwealth. On a few rare occasions it has run the "Spirit of Progress," but owing to its high weight concentration (92 tons on coupled wheels) its maximum speed has normally been restricted to 55 m.p.h., although this figure has been considerably exceeded in tests. In freight train service, it is limited to but 45 m.p.h. — maximum speed at which freight trains of predominantly four-wheel freight cars are allowed to operate in Victoria.

Because of weight limitations imposed by track and bridges, No. 220 has hitherto been prevented from running on the Western line. Even now a speed limit is enforced. Comparative tests are being undertaken with black coal, after recent modification of the firegrate and front end, designed to permit the burning of brown coal briquettes as fuel. A "Waugh" type firegrate has already been fitted, and a "Cyclone" type front end and other detail changes have been made for the purpose. It is anticipated that No. 220 will, for the time being, operate in fast freight service between Melbourne and Ararat (131 miles, via Bacchus Marsh).

Rocklea Plants Will Build Modern Steel Cars for Q.R.

As already reported in "RAILWAYS IN AUSTRALIA," Commonwealth Engineering Co. Ltd. have leased former Commonwealth munition works buildings at Rocklea, near Brisbane, for establishment of a plant to manufacture railway and other rolling stock, bus bodies, etc. In association with this enterprise, English Electric Co. Ltd. has leased other buildings at Rocklea, where it will manufacture electric components and equipment for railway, tramway and trolley bus rolling stock, and possibly at a later date, diesel-electric locomotives. Both firms will co-operate with the nearby works of Evans, Deakin Ltd., in building the first all-steel passenger cars for the Queensland Railways. These were described in the December, 1948, issue, and will probably be air-conditioned. Commonwealth Engineering will build the hulls and fit out the cars, using bogies built by Evans, Deakin and English Electric Co. components.

Tasmania Testing Welded Rails

Three miles of track about a mile south of Evandale on the main line between Launceston and Hobart are being experimentally thermit-welded into lengths varying from 72 ft. to approximately 200 ft. As this is not the cheapest system of rail welding, but the most practicable for work on a line, a fine but complex item of maintenance spent on the test length will be made before the Tasmanian Railways adopt a general policy of rail welding. A trial section of approximately 440 yards (welded into 220 ft lengths) was installed on the Western

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OUR COVER PICTURE

New South Wales Railways' 57 class 4-8-2 heavy freight locomotive, No. 5712, gets under way with a heavy Brisbane-Albury fruit express. The 57's take over these trains at North Strathfield Junction (near Sydney), on the southbound run. (N.S.W.R. Official Photo.).

(See news item this issue re 57 class double-heading.)

THE WAITING ROOM—
Letters to the Editor

The Editor,
Railways in Australia,

Dear Sir,

Having read with delight J.B.G.'s whimsical plea for a "truly Australian Standard Gauge," ("R. in A.," 3/49), and subsequently, Mr. A. D. Lockyer's letter advocating the merits of 5 ft. 3 in. gauge, I feel compelled to say my bit!

When railway "experts" themselves are often unable to comprehend the realities and possibilities of gauge standardisation and are sometimes misinformed enough to enter into public controversy on the subject, no one can be surprised if the great mass of the Australian people is bewildered, without being deliberately misled by sensational journalism on the subject, particularly by those making such extravagant and ridiculous claims that "railways are obsolete," and that "air and road transport can do all that the railways can—and better."

Most recent example of this muddled thinking was the occasion of the retirement of a senior Victorian Railways official, after 48 years' service. He was quoted (by the newspapers), as having said that he hoped that the standardisation project would soon be undertaken, but he thought that the broad Victorian (5 ft. 3 in.) gauge should have been chosen rather than 4 ft. 8½ in., as it "made for greater comfort and steadier riding on curves." Now, if, after 48 years' railway service, our friend believes that the difference of 6½ inches favours the broad gauge, because of "greater comfort and stability," he never learned much. But there are a great many railwaymen and others who would agree with him.

The standard Australian Railways maximum vehicle outline provides for an overall width of 9 ft. 9 in. for passenger rolling stock, and all new equipment built during the past 25 years in N.S.W., Vic. and S.A., as well as for the Trans-Australian line, has been at least of this width; some much more. For instance, the Sydney suburban electric stock is 10 ft. 6 in. wide (and the older Adelaide suburban end-loading cars are not much less), but this width can only be accommodated on restricted routes, especially required by traffic and operating conditions.

As to stability on curves, this gentleman should know that, on properly laid and maintained track, track gauge is of relatively little consideration as between the limits of 3ft. 6in., and up to 5ft. 6in. gauge. **It is design and maintenance that count;** that, plus design and maintenance of the rolling stock. In this latter regard, it is only comparatively recently that any progress has been made in design of trucks (I mean bogies) comparable with the very latest overseas,' for riding qualities and stability under good track and maintenance conditions. But, in the final analysis, the track, and the track alone, is the major factor.

Deeper and cleaner ballast, heavier rails welded into long lengths and laid on sleeper plates, with better drainage and engineering standards have contributed much to track improvement throughout the Commonwealth, but there is still a huge field for improvement, even on main lines. And improvement takes time—and money.

Recently I overheard a conversation at Albury station between two women engaged in transferring from the "Spirit of Progress," to the "Melbourne Limited." "Oh, dear!" said one, "I don't know what they want to change the 'Spirit' to that awful narrow gauge for," little realising that she was comparing equipment having efficient sound insulation and vibration-dampening spring mountings, with cars mostly built before such things were developed (even overseas), and running on badly-battered 80-lb. rail over much of the first 100 miles, after which she would most probably be sound asleep!

Perhaps the most ludicrous statements made against standardisation emanated from a former Queensland Railways official, who claimed, in effect, that, because the Q.R. had been (just) able to cope with the vast war-time traffic, despite their 3 ft. 6 in. gauge, this gauge should be adopted as the national standard, and all others altered to conformity. I do not decry the magnificent effort of the Q.R.—an effort made with the very minimum of necessities—which has resulted in the almost complete ruin of the system; nor am I anti-3 ft. 6 in. gauge.

In support of this argument, the fact remains that more half Australia's 27,000 route miles of railway are already of 3 ft. 6 in. gauge. What must be known (but seldom mentioned), is that more than half Australian railway route mileage OF ALL GAUGES is of **sub-standard** construction, judged by contemporary standards. However, it serves to remind us that had we built our "narrow gauge" railways in Australia to a standard comparable with that of say, Japan, or South Africa, i.e., to engineering standards equal to, or better than, the best in Australia at the present time, then (and only then), the 3 ft. 6 in. gauge could undoubtedly be adapted to meet the requirements of the Commonwealth for many years to come, with but little limitation on present maximum train speeds and loads.

The several separate decisions to standardise on the 4 ft. 8½ in. gauge were wise and have been based on three principal considerations.

1. That gauge offers the best scope for motive power development within the all-too-narrow limits of the existing structure gauge and its co-related maximum outline of rolling stock.
2. The major portion of the most highly developed railway system in the Commonwealth, i.e., that of New South Wales, which is also the most complex, serves the majority of heavy industries, such as steel and coal, and is already built to this gauge and is of generally good to excellent engineering standard.
3. Despite the "advantages" of wider gauges, experience in almost every other country in the world operating railways, has been that within the fixed limits of rolling stock outline, generally necessitated by width between track centres and lineside structures, better results can be achieved from "standard" than any other gauge.

(Experience in North America, Europe and Britain, particularly, as well as in Australia, supports this contention. Practically all the world's major high-speed trains, steam, diesel, or electric-powered, run on standard gauge track.) Theoretically, from the pure engineering point of view, perhaps the Russian 5 ft., or the Indian 5 ft. 6 in. gauge, offers the greatest **potential** scope for development, but **only if allied to a liberal maximum rolling stock outline,** which, except in the Soviet Union, is not the case. But in the United States of America and in Canada, where almost unlimited maximum dimensions for rolling stock have been adopted, principally because of the special physical characteristics of the topography of the country, practical experience of over a century of railway operation has clearly demonstrated that any advantage arising from an increase in track gauge, with the liberal rolling stock dimensions existing in North America, would be more theoretical than real.

When Brunel built the Great Western Railway of England to the almost incredible 7ft. 0¼in. gauge, he did not make the same mistake that the protagonists of the "Irish" (5 ft. 3 in.) gauge made in Australia. They did not adopt a sufficiently liberal maximum rolling stock outline consistent with the track gauge. **There, is the inherent shortcoming of the 5 ft. 3 in. gauge in Australia,** particularly in Victoria. Because the Victorian minimum structure gauge was actually a little less liberal than that adopted in New South Wales — before Australian standards were formulated, locomotive development in Victoria had been, and still is, to some extent, hindered by reason of the fact that the width **between** frames necessitated by the track gauge, necessarily limits the size of the cylinders which can be mounted **outside** the frames without fouling lineside structures. Theoretically, with a larger track gauge than 5 ft. 3 in., inside cylinders might have been further developed, despite their other inherent disadvantages.

The limitations imposed by the track gauge, combined with the desire to develop more even torque and reduce "hammer blow," resulted in the adoption of the 3-cylinder arrangement of the S-class Pacifics of 1928, and the H-class 4-8-4 of 1941. It is fairly safe to say that 3-cylinder propulsion will not be perpetuated in any new design of the Victorian Railways **after standardisation,** when it will be possible to provide cylinders of sufficient dimensions to provide for reasonable anticipated power requirements from steam locomotives of conventional type. The protagonists of the Irish gauge for Australian Railways were, in the first instance, responsible for the chaotic muddle of track gauges, which has arisen in this continent during the past 94 years. We can let it continue any longer only at our peril.

Opponents of standardisation continually claim that no increased traffic would result from a uniform gauge railway system in Australia. That dubious "fact," plus the cost, which is admittedly high by **pre-war** standards, have been their strongest arguments. In the past, the vast bulk of Australian interstate freight has been seaborne, supplemented by railway and latterly, road transport, during such critical periods as war-time and since. Railway transportation in Australia has been hamstrung by conflicting freight rating, handling charges and delays at transhipment points and the uneconomic use of rolling stock inseparable from non-standardised individual operation of systems. Given a nation-wide standard gauge, with uniform freight rating and accounting, traffic at present, either very limited in its extent or non-existent, will inevitably develop. Much of it will be of trans-continental origin, particularly in fruits and vegetables, and other perishable foodstuffs. Meat will be hauled to the densely populated eastern seaboard direct from slaughtering centres in the heart of the beef cattle areas of central and western Queensland and the Northern Territory, and the sheep areas of New South Wales and South Australia, in solid trains of refrigerator cars. Manufacturing industries will be encouraged to set up plants at decentralised locations throughout the Commonwealth, secure in the knowledge that freight loaded at the plant can be delivered anywhere on the mainland of Australia served by rail, without transhipment. Uniformity in rating, accounting, operating practices, equipment —in short, the complete **modernisation** of railway transportation in Australia cannot fail to bring untold benefit, which will result in a better standard of living for all the Australian people, present and future.

Railway standardisation built industrial America and is developing our sister-Dominion of Canada, just as surely as it will build a new Commonwealth of Australia —politically, economically and industrially.

Yours, etc.,
J. L. BUCKLAND.
South Melbourne, Vic.

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The Editor,
Railways in Australia,
Dear Sir,

Your contributor J.B.G., in his article on Standard Gauge, gives some interesting information and reveals himself as an ardent advocate of the 5 ft. 3 in. gauge, but his championing of this gauge to the detriment of standard gauge touches only the fringe of the matter. He appears to regard sleeper lengths as the all-important factor, whereas this appears to be the least of the worries, should 4 ft. 8½ in. be converted to 5 ft. 3 in. Sleepers in New South Wales are eight feet long and could easily accommodate tracks laid to the wider gauge.

The real troubles would occur with tunnels, bridges, overpasses, underpasses, and platforms. Were the 4 ft. 8½ in. tracks increased to 5 ft. 3 in., trains might literally scrape through tunnels and other narrow spots, but platforms, particularly on double track or multi-track sections, would have to be set back further from the rails to accommodate the wider gauge. This would be a colossal job in the Sydney area particularly, where many platforms are already too narrow as a result of alterations made necessary by the introduction of the wider electric rolling stock.

Of course, it may be possible to attach a device to the locomotive or leading car of an electric train, which would shave off the appropriate quantity of brickwork, etc., from lineside structures; but why consider such contrivances when none of these problems would arise with a conversion from 5 ft. 3 in. to 4 ft. 8½ in.?—Yours, etc.,

L. A. CLARK.

Parramatta, N.S.W.

(Our correspondent, whom we suspect of placing his tongue firmly in one cheek, has overlooked the fact that car width will remain the same whatever gauge is used, so that realignment of tracks, rather than the shaving of lineside structures, would be necessary.—Ed.)

The Editor,
Railways in Australia.
Dear Sir,

I was interested in the gauge-standardisation article by J.B.G. (March issue), and should like to give my ideas on this important question. I consider the best plan would be to convert only the 5 ft. 3 in. gauge to 4 ft. 8½ in., and leave all the 3 ft. 6 in. gauge. Not that I don't appreciate the advantages of complete standardisation, but I consider the conversion of such a huge mileage would be unwarranted as well as unnecessary and undesirable. It would be comparatively easy to convert 5 ft. 3 in. gauge, but to convert 3 ft. 6 in. gauge to 4 ft. 8½ in. may be even more difficult than constructing an entirely new line, and certainly very costly.

Another reason is that Queensland alone needs about 2000 miles of new lines, including the Dajarra-Birdum line. These lines, together with a large portion of existing track, serve only sparsely populated areas and, although most essential for developing and expanding the sheep and cattle industries, they would not be required to carry heavy high-speed traffic, and consequently the less costly 3 ft. 6 in. gauge would be the logical one. This would apply to a considerable portion of Australia. Anyway, South Africa has proved that 3 ft. 6 in. gauge is no handicap to efficient railroading, as their railways compare most favourably with many standard gauge railways.

With the construction of new 4 ft. 8½ in. gauge lines between Perth and Kalgoorlie, and between Port Pirie and Broken Hill, goods could be taken from Brisbane to Perth without change. These lines alone, even before Victoria and South Australia were converted, would mean that any journey, including the longest in Australia, would not go through more than two break-of-gauge stations. Even so, these stations need not be such formidable obstacles to fast rail transport, because the smaller packages could be loaded in containers, whole trains of which could be reloaded in less than an hour, provided modern, overhead travelling cranes were used.

Now I have another suggestion to make and, although it may not be too popular, I consider it most important. It is the building of a 3 ft. 6 in. gauge line from some point in S.W. Queensland to Broken Hill, and the running of a third rail from Terowie to Adelaide. Queensland and South Australia would then be connected by these few hundred miles of line. Apart from easing congestion on the busy lines of New South Wales, this scheme would be ideal and invaluable should any emergency arise, because the rolling stock of one system could be used to ease the burden on the other.

This line would permit coal from Queensland open-cut mines to be delivered in Adelaide in a little more than 48 hours, thus eliminating that city's frequent coal shortages and cutting of steam train services. Huge trains hauled by super-Garratt locomotives would make this economically possible. Motor bodies and other goods could be brought to Queensland quickly and cheaply.—Yours, etc.,

ROGER BOLAND.

Middle Creek, via Sarina, Qld.

The Editor,
Railways in Australia.
Dear Sir,

I was very disappointed to read in your April issue that because of opposition from the A.R. and L.H.S. you are discontinuing your very interesting constructive criticism of our railways. As you say, there is a great deal of criticism of railways in the press, but it is hardly ever constructive and is often written for political reasons. Only those who have the railways' interest at heart and are anxious to see our own railways modernised can give helpful criticism. Your readers all fall in this group. I think the A.R. and L.H.S. should be satisfied if you printed the usual notice relieving them of all responsibility for material outside the Bulletin section.

A good way to improve the magazine would be to ask the Society to include more pictures, and as soon as possible to increase the size of the magazine outside the Bulletin. Technical articles like "Gas Turbine Electric Locomotives" help railfans to know their hobby better. Other topics I suggest are: "Steam Heating in Trains," "Interlocking Systems." Best of luck.—Yours, etc.,

K. J. QUINLAN.

Concord West, N.S.W.

(Some time ago we said: "PLEASE do not ask for more pictures—we want them, too." The smallest illustration in our pages costs the equivalent of over a year's subscription for the half-tone block alone (which is why our agreement with the Society specifically limits the illustrations and plans in the Bulletin section). We would welcome articles on the lines stated. —Ed.)

The Editor,
Railways in Australia.
Dear Sir,

Some time ago I was given an undated clipping from a Melbourne newspaper of a photograph of a railcar "on the ground" with the caption: "Rail Motors to be Withdrawn—As a result of the accident to the Melbourne-Geelong Rail Motor, in which five passengers were injured near Laverton on Wednesday, the Railway Commissioners state that all similar motor trains have been withdrawn from service."

Recently I received a set of official V.R. photographs of railcars, but a photograph of the type of car involved in this accident was not included.

The Publicity Section of the V.R. were unable to assist when I wrote pointing this out and requesting the following information:—

1. The approximate date of the accident.
2. Were these cars ever returned to service after this withdrawal?
3. Was a photo of either the accident or type of car involved available?

Would you please ask through the pages of your magazine if any Victorian reader can recall the details of this accident and what type of car was involved?—Yours, etc.,

A. D. LOCKYER.

Barmera, S.A.

Question Box

Arrangements have been made for our Question Box to be handled by a well-known A.R.&L.H.S. member. Questions on any aspect of Australian railway operation may be forwarded; address envelope to "Question Box," c/o Traction Publications, 29 Seymour Gr., Brighton Beach, S.5, Vic. It is regretted that direct answers cannot be posted to correspondents.

Mr. A. H. LANE, Ivanhoe, Vic., referring to the article on "Locomotive Tonnage Ratings in the A.R. and L.H.S. Bulletin section of the April issue, asks: Can you explain why the "V" class, which, to my knowledge, hauled the heaviest loads on the Lilydale line, are bracketed with such "babies" as the B, L, M, P, and U classes for 240 tons on the Goulburn Valley lines?

ANSWER: The engines referred to in the article are the first V class 0-6-0 goods engines built by G. England in 1855; the first goods engines owned by the V.R. They had two inside cylinders 16" x 22", 5 ft. driving, 130 lb. boiler pressure, and developed 9400 lb. tractive effort; roadworthy weight was 49 t. 2 cwt.

The much larger Baldwin-designed second [illegible] engines did not appear until 1900-13. Originally Vaulclain compounds, they had four outside cylinders 13" and 22" x 26", 4 ft. 6 in. drivers, 200 lb. boiler pressure, and developed 22,500 lb. tractive effort. From 1912 onwards they were reboilered and converted to 2-cylinder simple (18½" x 26") with 180 lb. boiler pressure and 25,200 lb. tractive effort. Roadworthy weight was 91 t. 3 cwt., and their load rating was similar to that of the present A2 class.

Continued from Page 4

line between Western Junction and Perth about 1937 and has proved very satisfactory. A special rail-welding gang from Victoria is undertaking the work for the Tasmanian Transport Commission's Railway Branch.

Modernisation Plans For Newcastle Area

Newcastle's principal locomotive terminal at Broadmeadow is to be modernised and reorganised to handle high-capacity locomotives of larger types (57 and 58-class 4-8-2's), which will be utilised in freight service as soon as the current track and bridge improvement works on the Northern main line are completed. A roundhouse will be built to cover 21 tracks of the present No. 2 stabling ring ("bullring"), together with a power-operated 100 ft. turntable. Eight deep drop pits (three with 30-ton and five with 15-ton hoists) will be provided; also a seven-ton and a one-ton travelling hoist covering 14 roundhouse tracks. A small machine shop and extra office accommodation will be built.

A progress report on the new Cockle Creek bridge, which is on a deviation of 1¾ miles to enable main line trains to

(Continued on page 20)

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Region) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic

Engine Pictures

Now being tested on the "Overland" route of the Victorian Railways, as far as Ararat (see news item), H class No. 220 is the largest loco. on the V.R. system. Originally intended to be one of several express passenger locomotives for the "Overland" expresses, "Heavy Harry" remains the sole example of the 4-8-4 wheel arrangement in Victoria; freight haulage is more usual than passenger working. (Block kindly lent by "Truck & Bus Transportation.")

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post

L. H. SMART, Murrumbeena, Vic.—Thanks for suggestion. Present arrangement is that such data is given in Bulletin section, usually covering a whole system. We do not always have adequate info. on pics.

A. C. HILL, Sandringham, Vic.—Your suggestions read with interest. We hope to give the lists you suggest—trouble is to find someone to do it. Bulletin section gives this data in other forms. Have been watching carry-overs, but conditions of publishing prevent best results from being achieved. Have Vol. 1, No. 2 if you want it. Photos. kept—K shots are most unusual.

NOEL F. REED, Northbridge, N.S.W.—Thanks for very full and interesting information; using pics. when possible.

H. O'DEA, Huntley's Pt., N.S.W.—Illustrations limited by finances; historical pics. will be found in Bulletin section. Thanks for suggestion.

N R SMITH, Brighton-le-Sands, N.S.W.—Using pic. this issue, thanks.

R. G. ANDREWS, Brisbane, Q.—Thanks for sub. Mr. Buckland's address on News pages. Can supply list of Brisbane subs. if desired, but suggest you try A.R.L.H.S., who have most names. Send s.a. envelope in either case.

E. A. FROST, Auburn, N.S.W.—Article welcomed with the red carpet! Using as soon as suitable opportunity. Thanks for good wishes. Reminders sent automatically res. subs.

L. T. LALOR, Sea Lake, Vic.—Prints should be O.K. If so, shall certainly use—they are quite rare these days. Thanks for good wishes.

A. W. MOLONY, Ganmain, N.S.W.—Printing letter next issue.

Rolling Stock Parade

Built by the Clyde Engineering Co. Ltd., Sydney, N.S.W., this smart diesel car runs on the 3 ft. 6 in. gauge system of the Tasmanian Government Railways. Power unit is a 153 h.p. Gardner. (Block lent by "Truck & Bus Transportation.")

maintain greater speed because of easier curvature, reveals that the piers to carry the steel superstructure have been completed. They are founded 44 ft. below the bed of the creek. The two steel truss spans will be similar in design to the smallest span of the Hawkesbury River bridge. A new Cockle Creek station will be built on the deviation adjacent to the bridge, and the freight yard is to be extended.

As part of the work of providing a new modern freight terminal and yard at Honeysuckle (Newcastle), now approaching completion, a footbridge will be built to give pedestrians access from Hunter Street to Lee Wharf.

The power-signalling and interlocking installation replacing mechanical signalling between Civic and Hamilton Junction by colour-light signals and electro-pneumatic operation of points is well advanced. In connection with this work, the all-electric relay interlocking at Civic signal box is being extended. It was here, in 1937, that the first all-electric relay interlocking in Australia was installed, using standard telephone key switches without mechanical interlocking. This was the fore-runner of many similar installations on the N.S.W.G.R., in recent years. The existing mechanical signal-boxes at Wickham (late Hannell St.) and Railway St. will be retained to control the street level crossings at those locations, writes our Newcastle correspondent, Mr. K. Magor, to whom we are indebted for many items of Newcastle district news.

KOONDROOK TRAMWAY.

The Victorian Minister for Transport (Mr. Kent Hughes) hopes to introduce legislation to vest the Victorian Railways Commissioners with the capital indebtedness and remaining assets of the Kerang and Koondrook Tramway, a 14-mile line of 5 ft. 3 in. gauge in Northern Victoria. The line was built for the Swan Hill Shire in 1889. It has been operated mainly with old discarded V.R. locomotives and rolling stock, and certain classes of V.R. freight vehicles are authorised to run on the line. It carries a small, but regular traffic in passengers, livestock, timber and general merchandise, but would need considerable expenditure on track, culverts, etc., to bring it up to even the minimum standards of the Department. If the Bill goes through, the Department would, presumably, re-acquire the two existing serviceable locomotives—T-class 0-6-0 No. 267 and D-class 4-4-0 No. 122. The latter has the distinction of being the sole remaining example of the 4-4-0 wheel arrangement, once common in Victoria. This line was specifically included in the gauge standardisation project recommended by Sir Harold Clapp.

NEWS IN BRIEF.

Commonwealth: During the war the Commonwealth Railways purchased a Leyland "Titan" truck chassis, which was altered for use as a railway vehicle by Kent Engineering Co., Melbourne. A body was built by J. W. George & Son, Melbourne, and the completed rail-car was shipped overland to the North Australian Railway in April, 1942. The unit is believed to be still operating between Darwin and Katherine, N.T. At the instigation of enginemen on the Central Australian line, the C.R. have been testing an icebox in a standard brake van (known locally as a "relay van") equipped with sleeping, eating, cooking and toilet facilities. This [illegible] is No. 29 NHBR, and enginemen [illegible] been advocating provision of icebox[illegible] for food supplies in all relay van[illegible] (Owing to conditions in the territory traversed by both Central and Trans lines, Commonwealth Railways run trains on the "caboose" system; each train carrying two complete crews, who work alternate shifts. The off-duty crew lives in the specially-equipped brake van.—Ed.). The Commonwealth Government plans to build a high-level rail and road traffic bridge over the Ord River in the Kimberley district of North Western W.A., as part of its plan to increase cattle production in the North-West. Eventually building of strategic railways will be undertaken in this area.

LATE NEWS.

First S.A.R. Islington-designed and built diesel-electric switcher (No. 350, type B + B), outshopped and will be employed at Mile End yard Adelaide, as well the second (No. 351). They have English Electric prime movers. S.A.R. has also ordered ten road diesel-electrics from English Electric, which will be used in dual service role [illegible] the Lofty ranges between Adelaide [illegible] Tailem Bend principally. The switche[illegible] is a typical cab-at-end Yankee-looking diesel, with ground-loading steps and grab rails back and front.

CORRECTION: "On page 20 of the May issue, S.A.R. is said to have six Tx-class 4-8-0's. This should read **five** Tx-class, Nos. 276-280 inc. So far, three have been reconverted to narrow gauge—Tx277 to T199 and Tx 280 to T220, in April and Tx278 to T252 in May," writes Mr. Owen Thomas, of Hillside, S.A. He adds that Tx 276 and 279 were still working at Tailem Bend on May 7, but it is believed they will be reconverted to narrow gauge at an early date according to information from semi-official sources.

Your Favourite Photo

Reader N. R. Smith of Brighton-le-sands, N.S.W., snapped this fine view of Commonwealth Railways' C class No. 66 at Kalgoorlie, W.A., in March of this year. Except for the exceptionally large tenders (provided to meet the difficulties of desert haulage), and various minor details, the C class are identical with the New South Wales Railways' C36 class, the designs of which were copied. Built by Walker Bros., of Maryborough, Qld., in 1937, C class have a tractive effort of 30,000 lbs., and are used for both passenger and freight haulage on the Trans-Australia line. Tenders hold 17½ tons of coal and 12,000 gallons of water.

Readers are invited to send [illegible] print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. **Prints will be returned if requested.**

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Railways in Australia

and

A.R.L.H.S. BULLETIN

The Magazine about Australian Trains

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Vol. II, No. 7 JULY, 1949

BRITISH EXPERT URGES UNIFIED COMMONWEALTH CONTROL

For efficient operation, Australia's mainland railway systems should be under uniform Commonwealth control, the visiting British Railways expert, Mr. John Elliot, said in Sydney on June 7.

Mr. Elliot, who visited Victoria at the invitation of the Minister for Transport (Mr. Kent Hughes) to advise on the development of the Victorian Railways, is chief executive officer of British Railways (Southern Region). Mr. Elliot was accompanied by Col. A. C. Payne, director of the Southern Region Staff Training College, and they have together submitted a comprehensive report on the Victorian Railways and transport development generally, to the Victorian Government. Their report has not yet been made public.

According to Mr. Elliot, top-ranking railway executives in Australia agree that continued separate State control of individual systems is prejudical to efficiency. A Commonwealth-sponsored central transport commission, similar to that now functioning in Britain is necessary to conduct, co-ordinate and control all forms of internal transportation, which is indivisible in the modern era. Mr. Elliot emphasised that standardisation of railway gauges in Australia was essential. Continuation of the past policy of physical division of State railways into five virtually water-tight compartments prevented proper economic use of locomotives and rolling stock, was wasteful of manpower and materials and an anachronism in view of the changed character of the Australian economy which has resulted from World War II.

He instances the organisation of the South African Railways and Harbours administration and the liaison between the privately-owned Canadian-Pacific Railway Co. and the government-owned Canadian National Railways as perfect examples of highly successful unified control.

Mr. Elliot also commented on what he described as the out-of-date method of feeding railway passengers in Australia. It is sheer waste of time to stop trains to feed passengers, who should be fed on the train in restaurant cars.

On completion of their investigations in Victoria, Mr. Elliot and Col. Payne entertained an assemblage of railwaymen at the V.R. Institute on May 12, when each spoke with appreciation of the co-operation extended to them by the V.R. Commissioners. They showed an excellent series of films illustrating some aspects of railway operations in the Southern Region. Mr. Elliot concluded his remarks with a tribute to the job being performed by the V.R. under considerable difficulties.

Replying to Sydney press criticism of his statements, Mr. Elliot, in a letter published in "The Sydney Morning Herald," of June 11, wrote:—

1. "You do not need to wait for unification of gauges to create a central authority. It can function effectively for the railways as they are to-day. . . .
2. "You say that a single authority 'holds no shape of practical reality.' Does not the Commonwealth-wide set-up of the airlines prove that the very opposite is the case? Would anyone seriously suggest that each State should have its own airlines, controlled and limited by the outlook and policy of each State?
3. "Australia is one Commonwealth, and its industries are Australian, not

(Continued on page 20)

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Road, South Melbourne, S.C.5, Victoria.
Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert

S.A. WILL DIESELIZE HILLS LINE

At a cost of approximately £800,000, of which £300,000 will be expended at Islington shops, the South Australian Railways have ordered ten 1760 b.h.p. diesel-electric locomotives to work over the heavily-graded Southern line between Adelaide and Tailem Bend. English Electric Co. are the successful tenderers for supply of prime movers, traction motors and control equipment. The locomotives will be designed and constructed by the S.A.R. at Islington shops, and will be of the C plus C wheel arrangement, arranged for multiple unit operation in both passenger and freight train service.

They will be designed to speed up both freight and passenger schedules over the Mount Lofty Ranges, thus increasing the capacity of the busy single line between Belair and Tailem Bend, which carries the most intensive traffic on the S.A.R. system. According to the Commissioner (Mr. R. H. Chapman) full dieselization of traffic on the Hills line will save £75,000 per annum, as compared with the continuation of steam operation. The locomotives will be geared for a maximum speed of 70 m.p.h. for passenger service, whilst their 1,760 b.h.p. rating will enable tandem operation of 600-ton freight trains over the 1 in 45 ruling grade at approximately 20 m.p.h., compared with only 540 tons at barely 10 m.p.h. for the 500-B class 4-8-4 locomotives and somewhat less for the 720-B class 2-8-4's.

By increasing the average speed of freight trains, it would enable them to be interspersed with passenger trains during the busier periods, thus increasing track capacity. The first sets of equipment are scheduled to arrive from England before the end of 1950. In the interim the bogies, underframe and superstructure will be designed and manufactured at Islington.

RECORD NUMBER OF LOCOMOTIVES ON ORDER FOR AUSTRALIA OVERSEAS

A total of 228 new locomotives is at present on order from British locomotive builders for Australian railways, as under:

Q.G.R. . .	20	B-18¼ class 4-6-2's from Vulcan Foundry.
	10	Beyer-Garratt 4-8-2 + 2-8-4's from Beyer, Peacock & Co.
N.S.W.R.	25	Beyer-Garratt 4-8-4 + 4-8-4's from Beyer, Peacock & Co.
V.R.	50	N-class 2-8-2's from North British Locomotive Co.
	10	0-6-0 diesel electrics from English Electric Co.
T.G.R.	20	B + B diesel-electrics from English Electric Co.
	10	medium 4-8-0's from Robt. Stephenson-Hawthorns Ltd.
	8	heavy 4-8-2's from Vulcan Foundry.
W.A.G.R.	35	PR-class 4-6-2's from North British Locomotive Co.
	40	W-class 4-8-2's from Beyer, Peacock & Co.

In addition both N.S.W.G.R. and S.A.R. have on order from English Electric Co. equipment for ten C + C diesel-electrics to be assembled in their own shops. Victoria, Tasmania and Western Australia have diesel railcar units on order from British manufacturers, although in the case of the former two, the coach bodies and trailing bogies will be manufactured in Australia. South Australia, New South Wales and Queensland have diesel engines on order for powering new diesel railcar units at present under construction.

Builder's photo. of No. 5701, taken in 1928, before fitting of headlights, etc. The 25 engines of this class (see news item) were built by Clyde Engineering Co., and have the 4-8-2 wheel arrangement.

(Block, courtesy "Truck and Bus Transportation.")

RECORD N.S.W.R. LOAD 2000 TON TRAIN Tests Continued

Continuing tests instituted on May 5, when a 1,500-ton coal train was worked from Lithgow to Blackheath with two 57-class 4-8-2 engines assisted in rear by a 32-class 4-6-0 to Zig Zag, the Department has repeated this procedure with variations. In one test the second 57-class engine was replaced at Zig Zag by a 53-class 2-8-0, and with the assistance of the 32-class push-up engine, the train was restarted and taken on by the two engines to Blackheath, where a 53-class was detached with portion of the load in excess of the normal 1,100-ton 57-class load, forming a separate train to Enfield. On May 19, however, this procedure was again varied by sending the 53-class helper engine back to Lithgow from Blackheath, where an additional 500 tons, which had been staged off a previous train was attached. The single 57-class engine then worked the 2,000-ton train unassisted, under control of Grade Control Valves fitted to the coal cars, down the mountains to Enfield. Apparently this huge train was unchecked at Penrith, as assistance would certainly have been needed to surmount Kingswood Bank. This is the largest single engine train load on record as ever having been run on the N.S.W.G.R. Experiments are being continued in view of the necessity to standardise on maximum tonnage trains for handling the anticipated expansion of coal output from the Western field, prior to the change-over to electrifica-

tion. (See May issue). It is anticipated that full development of the Western coalfield may involve an intensive service of approximately one train every 15 minutes 24 hours a day and seven days a week out of Lithgow! Under such conditions, the old proposal for a long tunnel and a new route via Cox's River, thus avoiding the steep mountain grades might become economically feasible.

Material Shortages Delay Loco. Programmes

Completion of the final two of twenty-five C-38 class Pacifics at the N.S.W.G.R. shops has been delayed by material shortage. At Cardiff, the twelfth and last C-38 to be constructed (No. 3829) is held up for lack of certain castings. At Eveleigh shops No. 3830 is awaiting supply of roller bearings.

D 58 Class Details

Cardiff shops have been manufacturing component parts for D-58 class 4-8-2's which will be erected at Eveleigh owing to present restrictions on the Northern line. No. 5801 is scheduled for delivery in September. Many refinements in design and details of equipment will distinguish the 58-class from the 57-class prototype. Some twenty detail modifications include use of an integral cast steel locomotive bed imported from U.S.A., cylinders reduced in diameter from 23½ in. to 21½ in. to conform to the loading gauge and to permit use of 85 per cent. cut-off in full gear, longer travel, 12-in. diameter valves having better events due to forward suspension, together with an improved design of valve gear for the centre cylinder. The redesigned conjugating valve gear will be mechanically lubricated and provided with a dust-proof cover.

Direct large-diameter steam and exhaust ports and passages are used with modern "streamlined" front and draft-ing. The redesigned crossheads with spherical little ends and gudgeons, are fitted with removable slippers and split collet gudgeons. Redesigned connecting and coupling rods of the Lima tandem drive type will distribute the thrust from the outside cylinders over three adjacent crank pins. The leading bogie frame has been redesigned with a unit steel casting to incorporate roller bearing axleboxes. The Boxpok type driving wheels will be dynamically balanced.

A Melesco multiple valve front end throttle is incorporated in the superheater header, which is fed from a large diameter internal steam pipe connected to a centrifugal steam dryer located in the dome. Westinghouse A6-ET air-brake equipment with a cross-compound compressor is fitted. The main reservoirs are cast intergral with the locomotive bed. A redesigned cab of welded design will conform with the loading gauge. The motion will be electrically lit, as will tender steps to cap and water filler hole on the tender tank. An air-operated steam chime whistle, similar to those on the 38-class will be fitted.

NEW W.A.G.R. MOTIVE POWER

Through the courtesy of Mr. J. Downes, Secretary of the Railways Publicity Committee, W.A.G.R., we are able to publish some details of the 35 additional PR-class Pacifics on order in Britain, also the first specifications for the new W-class light 4-8-2 type locomotives. The first PR additions are expected to be delivered before the end of 1949 and the W-class about the middle of 1950.

Some slight variations have been made to boiler heating surface, weight and tender capacity of the PR-class, as compared to those at present running. The leading dimensions are:—

	PR 4-6-2	W 4-8-2
Cylinders (two—outside)	19 in. x 26 in.	16 in. x 24 in.
Coupled Wheels, diam.	54 in.	48 in.
Coupled Wheelbase (rigid)	10 ft. 0 in.	13 ft. 4½ in.
Length over Couplers	62 ft. 6¾ in.	61 ft. 11 in.
Boiler Pressure	175 lb./sq. in.	200 lb./sq. in.
Heating Surface, sq. ft.—		
Tubes and Flues	1370	1079
Firebox and Arch Tubes	136	117
Total Evaporative	1506	1196
Superheater	363	320
Combined Total	1869	1516
Grate Area, sq. ft.	35	27
Coal Capacity, tons	8	7
Water Capacity, gallons (imp.)	4000	2500
Tractive Effort (at 85 per cent. B.P.)	25,840 lb.	21,760 lb.
Total Weight Roadworthy	109 tons	95 tons

Both classes have a steel firebox of welded design fitted with arch tubes. The main frames are rigidly stayed by a continuous horizontal stretcher running from the smokebox saddle to a frame joint casting at the firebox throatplate. This joint casting incorporates the firebox support at the outside corners, thus facilitating lubrication of the slide faces. The wide splayed rear frames allow the fitting of an amply-proportioned hopper ashpan with side discharge doors.

The leading bogies are of the spring-controlled slide type, whilst the trailing trucks are of the Cartazzi radial type. The cylinders and steam chests follow modern design with wide direct steam ports with large exhaust passages incorporated. Steam distribution is by Walschaerts valve gear controlled by steam-operated power reverse gear. The cabs are designed to the maximum permitted by the loading gauge and are fitted with comfortable seats with back rests for enginemen. To minimise heat in summer the length of firebox projecting into the cab has been kept to a minimum. Vacuum break with compensated foundation brake rigging is fitted to engines, with vacuum and hand brakes on the tenders. Tender tanks and bunkers are of welded construction.

The PR-class have the maximum permissible axle loading of 14 tons, and roller bearings will be fitted to all axles of engine and tender. Cylinders, valves, valve spindle glands and piston rods are lubricated by a Silvertown mechanical lubricator. The PR engines are intended to haul express trains over main lines and will be painted green, picked out with black and white lining.

The W-class, which are intended to operate on light agricultural lines have a maximum axle loading of 9½ tons. The coupled wheel springs are underhung and non-compensated, with auxiliary rubber springs fitted on the spring links. Roller bearings will be fitted on all carrying axles and tender axles, with plain bearings for the coupled axles, which will be lubricated by a Silvertown mechanical lubricator, which will also feed the coupled axlebox horn guides. The cylinders will be fitted with Hendrie by-pass valves. Vacuum operated sanding equipment will be fitted, whilst the cabs will have pivoted windshields at the sides. Forty of these dual-service locomotives will provide a pool of modern motor power of sufficient capacity to meet traffic requirements on the lighter lines throughout the system. They will be painted in the standard locomotive colours of grey and black.

Q'ld. Improves Blair Athol

Blair Athol coal is proving somewhat of an embarrassment to the Q.G.R., which must haul it out over the light-railed single line branch to Emerald, 165 miles west of Rockhampton on the Central line. The Minister for Transport (Mr. Duggan) recently announced a £100,000 plan for regrading and improving the Blair Athol branch to cope more expeditiously with the ever-expanding coal traffic. Regrading between Clermont and Emerald will be undertaken to enable operation of a through ruling grade load of 425 tons —90 tons more than the present maximum. A locomotive water supply will be provided at Capella—incidentally the railhead for the vast Peak Downs sorghum-growing industry established recently by the Queensland-British Food Corporation—and existing Staff and crossing stations at Kabelbara and Jaga-

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linga will be replaced by four new crossing loops to cost £9,900. Residences for additional trainmen are to be provided at Blair Athol, together with additional engine terminal facilities there and extra siding capacity at Emerald.

UNIFICATION

Latest reports from informed quarters in Canberra suggest that the Commonwealth Government intends to proceed with the standardisation project, despite the objections of the New South Wales Government, which has demurred at contributing £10 million towards its share of the tri-State unification already agreed upon.

Unofficial reports suggest that since the Western Australian Government has ascertained that modernisation and rehabilitation of its railways will cost at least £26 million, it is now willing to accept the Commonwealth proposals, which provide initially only for extension of the standard gauge Trans-Australian line westwards to Perth from Kalgoorlie. Negotiations still remain to be re-opened with the Queensland Government at the August Premiers' Conference. Queensland has previously opposed standardisation to the point of open hostility. The fact that rehabilitation and modernisation of the Q.G.R. is expected to cost at least as much, if not more, than its share of the standardi- Queensland opposition to participation in the national scheme, which may now become a "30-year plan" on a continent-wide basis, financed almost entirely by advances from the Commonwealth to the participating States.

OUR COVER PHOTO.

Extra Northbound Sydney Express, climbing Wallan Bank to Heathcote Junction, on the Victorian Railways, hauled by A2 class Nos. 943 and 956. John Buckland was behind the camera —the date, August, 1937.

THE WAITING ROOM—

Letters to the Editor

The Editor,
Railways in Australia.
Dear Sir,

I have intended writing to you for some time to tell you that I enjoy "Railways in Australia" very much. It is most interesting and is almost our only means of learning a little about Australia's railways. I know its production means a good deal of work must be carried out by some unselfish persons, and I wish to thank all concerned for their untiring efforts in this respect. I am certainly in favour of editorials, as I don't see how they could possibly offend any officials. In fact, the officials concerned would probably welcome all the various policies and ideas as they should then make important decisions much more easily.

Modernisation of Australian railways is certainly overdue, but I wish to point out that modernisation definitely does not mean dieselisation—in fact, it usually means the exact opposite. I consider it would be nothing short of a tragedy if our railway officials purchase diesel-electrics simply because diesel propaganda causes the public to think that diesels are the fashion to-day. This must be the reason, because recent tests and other figures from America show that it is certainly not superiority in economy, performance or reliability as compared with modern steam locomotives. In view of the fuel and dollar positions, diesel-electric traction would be even more ridiculous here than it is in America.

I also note with regret that some of our most important trains may be turned over to diesel haulage because it is thought that steam locomotives are too heavy for the track. I thought it was a well-known fact that steam locomotives produced considerably more horsepower per ton than do diesel-electrics. Heavy steam locomotives do not have to be built with only three driving axles. Locomotives of even greater power can be built with about half the axle-loading, provided the highly successful Garratt design is used. This design permits a large, low-slung, free-steaming boiler to be used in conjunction with high driving wheels which, with 3-cylinder engine units, shorter stroke, and low axle-loading, would give a very powerful machine capable of running very smoothly at high speeds and still be easier on the track than are diesel-electrics. Garratt locomotives of well over 8000 h.p., and weighing even more than America's heaviest steam locomotive, can be built and still retain an axle-loading even lower than that of a General Motors 4-unit diesel.

Anyone who is inclined to take notice of diesel advertisements and think that diesels require less maintenance than steam engines should remember this interesting comparison: In order to develop about 4500 useful horsepower, a G.M. 3-unit passenger diesel has, I believe, 72 cylinders, 72 pistons, 288 exhaust valves, 72 big-ends, etc. A steam locomotive has only 2 pistons, 2 valves, etc., in order to develop about 6000 useful horsepower. It should therefore require very little imagination to get some idea of the maintenance costs of all the diesel parts working under internal combustion conditions, compared with the few steam engine parts working under much less severe conditions, especially in relation to work performed.—Yours, etc.,

ROGER BOLAND.

Middle Creek, via Serina, Qld.

(Principal economy factor in favour of the diesel is greater availability for service, plus immediate readiness for road.—Ed.)

The Editor,
Railways in Australia.
Dear Sir,

Your publication is really excellent, and could become, in time and with proper handling, the semi-official mouthpiece for progressive railway thought in the Commonwealth, and circulate freely within professional railway circles.

It is a pity that the A.R.L.H.S. has adopted such a narrow attitude towards editorial policy. I think the railway administrations throughout the Commonwealth would welcome constructive criticism, and are not likely to be so thin-skinned as to take repressive action against a journal printing all the facts. Railwymen, from the commissioners down, are doing a remarkable job, under difficult conditions, and the community should be constantly reminded of the fact.

My opinion has always been that railways in this country should be operated by Commissioners, completely free from political influence, and unimpeded by State boundaries. Thus the railways of South Australia, Victoria, and New South Wales should be under one unified control, with, perhps, Queensland and the Northern Territory forming a second, and West Australia and the "Trans" a third sphere for independent Commissions. These Commissions should be free to build the railways that are economically sound, but leave developmental and strategic lines to the State or Federal Governments. The Commissions should then operate the latter and be paid a subsidy for so doing, this subsidy being sufficient to offset interest and sinking fund charges, and operating losses. When (if ever) these lines become self-supporting, they should be handed over to the Commissions as their responsibility.

The Commission should be free to float their own loans for the purpose of capital expenditure, and should be free to determine their freight rates, the latter to be subject to the approval of a Freight Rates Court, this court to determine rates for rail, road, air, and sea transport. I imagine this body to be similar to the Arbitration Court in many respects, and to be the final arbiter in all disputes, and the clearing house for complaints. The present Rates Structure should be thrown away and a new one introduced. At present, farmers send starving cattle to pastures new at what has been accurately described as the "Axlegrease Rate." Secondary industry is granted concession rates to encourage decentralisation. These are just two of many examples. Why should the railways lose money to transport starving stock? Why should they be the subsidising medium for decentralisation? In all cases, they should be entitled to charge full rates. If the Government thinks that the farmer cannot stand the strain, or that the industrialist needs encouragement, both should be provided for from a special fund.

It is the improper use of railways which has led to the present mess. However, despite it all, the railways are trying hard to cope with a colossal problem, and it is to the everlsting credit of our railway departments that so much progress has been made under such trying financial arrangements.

In comparing our railways with those overseas, it is well to remember that we enjoy a service not warranted by population density, and to which we are not entitled. The Americans do not run their crack trains over secondary and branch lines, as many would have us believe. The luxury provided by U.S. railroads is not cheap, and I doubt whether the average Australian traveller is sufficiently well lined to afford comparable comfort if provided locally at American rates.

Standardisation of railway gauges is, of course, essential, particularly for the three south-eastern States. The question of gauge is "contentious matter," and I shall say no more, except that I do not agree with J.B.G.!

Wishing "Railways in Australia" a prosperous future.

Yours, etc.,
A. W. MOLONY.

Ganmain, N.S.W.

The Editor,
"Railways in Australia."
Dear Sir,

The type of railcar involved in the accident on the Geelong line many years ago (letter from Mr. A. D. Lockyer, 6/49), was possibly either what is known as the "Double-ended Leyland Rail Motor" (Nos. 51-54, inc.), or the McKeen Rail Motor Cars (Nos. 1-2), though most likely the former, as the McKeen cars never ran on the Geelong line, to the best of my knowledge. Leyland Rail Motors are somewhat similar to the CPH type 42-ft. railcars of the N.S.W.R., and were built at Newport about 1925. They are still in service on branch lines and, so far as I am aware, have never been withdrawn for modification. I believe they were used on the Geelong line for a short time.

Yours, etc.,
J. L. BUCKLAND.

South Melbourne, Vic.

Question Box

Arrangements have been made for our Question Box to be handled by a well-known A.R.&L.H.S. member. Questions on any aspect of Australian railway operation may be forwarded; address envelope to "Question Box," c/o Traction Publications, 29 Seymour Gr., Brighton Beach, S.5, Vic. It is regretted that direct answers cannot be posted to correspondents.

Mr. W. R. ROBERTS, Charlton, Victoria, asks the difference between a "lantern" roof and a "clerestory" roof, on a railway carriage.

ANSWER: These two terms are generally understood to mean the same thing: A roof with a raised central portion, vertical windows separating the upper and lower parts of the roof. As you suspect, "clerestory" was incorrectly spelt in the May issue article on early N.S.W. sleeping cars.

Two questions on Australian loading gauges have been held over from earlier issues, in the hope of securing answers that were both brief and accurate. One is from Mr. A. Maky, Milton, Queensland, asking the present loading gauge limits on all Australian railways; the other is from Mr. R. Barker, East Brisbane, Queensland, asking for the V.R. and S.A.R. loading gauges before 1923. A good deal of effort has gone into obtaining data from which to provide answers to these, and it has become obvious that an accurate and full answer would be many times too long for this column. However, some of the more important points in reply are:—

The two main types of loading gauge must be clearly distinguished. One is the structure gauge, which sets the limits within which lineside structures (platforms, tunnels, signalling, etc.) must not project. The other is the rolling stock gauge, which sets the outer limits to rolling stock contours. A diagram of the former naturally shows more liberal measurements than one of the latter, especially on curves.

In 1912, all States agreed to a new structure gauge, much larger than any system had before that date, and all work for some years subsequently conformed to that standard. It was found impracticable, however, to alter all existing structures on all systems and, although this 1912 gauge was confirmed in 1923, with some slight amendments, it has not yet become

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Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

BENDIGO TOUR

As announced in our last issue, the A.E.T.A. Rail-Tram Tour to Bendigo, which was planned for the King's Birthday holiday, had to be postponed at the last minute, when the railway authorities were unable to provide the railcar and trailer (owing to unforseen difficulties).

It is hoped to hold the tour on either Cup or Show Day.

PERSONAL

The Chairman of Commissioners of the Victorian Railways, Mr. N. C. Harris, was honoured in the King's Birthday Honours List with an appointment as a Companion of the Order of St. Michael and St. George (C.M.G.). Mr. Harris is already the holder of military honours from World War I.

Our Fan Mail

It is the Editor's desire to answer all letters written to him by our readers. At the present time this is impossible, and there is a huge back-log of mail from our other publications. To meet this situation, new subscribers will be sent a circular letter with their receipt. Other letters will be acknowledged in this column from time to time. Letters to which a direct reply is desirable will be answered by post

H. N. O'DEA, Huntley's Point, N.S.W.—Photo. suffered dmage from folding; should like to use, but space is a problem at present.

J. F. SENNETT, East Kew, Vic.—Shall use your contribution, which strikes a novel aspect.

really effective.

In actual fact, then, new and old structures, and new and old rolling stock, conform to different contour limits and, on some systems, this fact limits the availability of certain rolling stock to certain lines, quite apart from the axle-load factor. It will be understood, then, that a full answer would consist not of a few figures, but of quite a collection of rather complicated diagrams. It will also be understood why even the experts are at present finding it difficult to reach agreement on a practicable all-Australian standard for uniform gauge purposes.

Port Kembla News

Supplementing the notes in our May issue, Mr. J. L. Southern, of Wollongong, sends the following information about developments on the Australian Iron & Steel Ltd. private railways and other lines in the Port Kembla area. He writes: "A.I. & S. No. 1 (0-8-2T) was reboilered and returned to service at Wongawilli Colliery at the end of 1948, after having been out of action for several years. 'Platypus' (O-6-OST) has been out of service since 1948 undergoing boiler repairs and a general overhaul at the Steelworks. Lysaghts Kembla Works engine 'Alison' (O-4-OST) is at present undergoing similar treatment by A. E. Goodwin Ltd. A.I. & S. No. 9 (O-8-OST) which was out of action for several years during the war, was reboilered at Port Kembla and returned to service on the Mount Kembla Colliery line last year, now painted black with red lining instead of its former green and black. Its former name 'Port Kembla' has not yet been restored. Mt. Keira (A.I.S.) Nos. 1 and 2 (O-6-OT) were both reboilered in 1948 and returned to service. 'Lithgow' (O-6-OT) is also on the Mt. Keira line.

"The first diesel-electric B + B engine may arrive at Port Kembla steelworks in the next few months. The prime movers and electrical equipment have been delivered by English Electric Co. and bogies and underframes are being manufactured at Bendigo (V.), Ordnance Factory. Commonwealth Engineering Co. will assemble the engines at their Clyde works. Diesels are tentatively A.I.S. class D Nos. 1-8. Nos. 1-7 will be geared for a maximum speed of 20 m.p.h., whilst No. 8 will be geared for 30 m.p.h. for main line

Continued on Page 19)

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

From Tasmania comes this month's Favourite Photo., the work of reader J. Shennan, of Launceston. The train depicted is the 11 a.m. Mixed from Hobart to Cadbury's Works — a suburban run. A sturdy 4-4-0 A class, No. 4 of the Tasmanian Government Railways, was built by Beyer Peacock in 1892 (Builders' No. 3392). The date was 1943.

BALANCED WHEELS
For Passenger Cars
By Paul J. C. Friedlander
(Continued)

What It Means

What does all this centrifugal force mean to the passenger? It means that in a car with two four-wheel trucks, if all the wheels are out of balance (and they can very well be) at 85 m.p.h. each of the eight wheels is fighting the motion of the other wheels, the forward pull of the locomotive and the innate stability of the car, 800 times per minute.

The terrific centrifugal force, the pull of this wasted power, and the stress of these divergent forces against the trucks and thus the car, and the tracks, is a major source of bumping and churning, swaying and whiplash transmitted from the trucks to the cars.

The importance of wheel balance is recognised by James H. Aydelott, vice-president in charge of the operations and maintenance department of the Association of American Railroads, in this comment on the A.A.R. tests:

"In the light of increasing train speeds, the Association of American Railroads has conducted a comprehensive series of road tests covering the relations between wheel balance, the contour of wheel treads and variations in track gauge. Definite engineering conclusions cannot be reached until the mass of information collected is analysed and evaluated, but it is apparent that correct wheel balance and roundness are important in riding comfort."

Balance in the Future

An unqualified endorsement of wheel balancing comes from Gen. G. M. Barnes, vice-president in charge of engineering of the Budd Company, manufacturer of a large part of the nation's passenger cars.

"From observations made during the tests the Budd Company made for the Association of American Railroads," General Barnes said, "it became apparent to me that a much more relaxed and comfortable ride was possible in a passenger car fitted with balanced wheels than could be had in a car with wheels out of balance.

"As a result of this I recommended to the Budd Company, and it agreed to balance all wheels on passenger cars in the future. The details of how this is to be accomplished are being studied now, and when the answer is found, we shall start our wheel-balancing programme."

The spectacular riding comfort of the General Motors Train of To-morrow is attributed, in large part, to the fact that its wheels were balanced before the train took to the road. Eighteen sets of brand new wheels (two wheels and an axle constitutes a set) were balanced for the Train of To-morrow. The smallest amount of imbalance found was four and one-quarter ounces, the largest, three pounds.

(To be continued)

Continued from Page 18

use between Wongawilli Junction (Brownsville) and the Steelworks. It will replace 'Iron Duke' (4-6-4T) on this duty. The diesels will mostly be engaged in coal haulage, for which thirty 60-ton capacity coal hopper cars are on order. The Mount Kembla (Nebo) line is being regraded and strengthened by relaying with 107-lb. rail, and many curves are being widened and eight bridges, culverts, etc., reconstructed in steel and concrete. A 2,000-ton capacity coal storage bin is being built for transfer of coal ex the new Nebo Colliery to the railway. A branch line will serve a 3,000-ton bin being built to receive the coal ex Mt. Kembla-Mt. Keira Colleries, via the new Kemeira Tunnel, which, when in operation, will eliminate the present standard gauge haulage incline at Mt. Kembla, also the 2 ft. gauge incline and the Mt. Keira Railway. This will be eliminated within the next three years.

"At Bulli Colliery, the new tunnel being driven for 3 ft. 6 in. gauge underground diesel locomotive haulage will result in the elimination of the present standard haulage incline and the reconstruction of the existing railway, as described in our May issue. Work has already commenced on preparation of the site for the hot and cold strip and tinplate mills to be established on reclaimed land at Tom Thumb Lagoon, and for this project a road overbridge spans the Port Kembla branch (N.S.W.R.) at 53 m. 35 ch., near Lysaghts platform. A trailing junction off the Down Kembla

Engine Pictures

Often in the news, the Australian Standard Garratt locomotive design was a product of war-time necessity. Designed for 3 ft. 6 in. gauge work, A.S.G. engines are now found in Queensland, West Australia, and Tasmania, as well as on the 3 ft. gauge lines of a cement works in Victoria. Our illustration (left) shows No. G1, after assembly at the Newport Shops of the Victorian Railways (V.R. Official Photo.). This engine went to Queensland after completion, in 1943.

Well-known in Australian railway circles are the 75 express passenger locomotives of the New South Wales Railways, which comprise that system's 36 class. This reproduction of an official N.S.W.R. photo. shows No. 3601, after completion in 1925, and affords an interesting comparison with the Commonwealth Railways' C class engine illustrated last month. (For the blocks of thes photos. we are indebted to "Truck and Bus Transportation.")

WHAT IS IT?

Among a number of blocks which we acquired recently was this picture of a typical Shay loco., apparently the property of a Queensland line — possibly the Buderim or Mapleton tramway. Can any reader give details?

line was installed at 53 m. 70 ch. in January, 1949, for access to the site. On completion of dredging a new channel for Allan's Creek, a new steel bridge will carry the A.I.S. Steelworks railway over the creek parallel to the N.S.W.R. lines to the 2 sq. miles mill site, which will eventually be served by approximately 30 miles of new railway, thus doubling the present steelworks' railway mileage."

Referring to the former Public Works Department lines at Port Kembla, Mr. Southern adds: "On January 1 last, the N.S.W.G.R. took over the operation of the P.W.D. network serving Port Kembla industries and wharves and concurrently P.W.D. engines 28, 29, 75, 79 and 80. Of these, Nos. 28 and 29 (Hudswell Clark O-6-OT's) were sent to Eveleigh shops for reboilering and overhaul, after which No. 79 (Hunslet O-6-OST) will be similarly overhauled. No. 75 is temporarily still "on loan" to the P.W.D., which retains control of engines 27 and 34. The latter is at present undergoing repair at Port Kembla and No. 75 is temporarily replacing it. The former Z18 and Z20 engines will presumably resume their former N.S.W.R. numbers, whilst the remainder will join the X10 class. On completion of repairs to the former PWD engines, Nos. 1310 and 2019 will be returned to the general traffic pool. Engine 2604 is now working the Port Kembla lines. In March last twelve locomotives were employed on the former PWD lines—9 N.S.W.R. and 3 ex-PWD, of which two were under repair. The ten serviceable engines were employed as under: breakwater and quarry 2, No. 1 Jetty 1, No. 3 Jetty 3, No. 4 Jetty 1, and 3 on commercial shunting and transfer duties. Commercial activities served by the former PWD lines include Commonwealth Oil Refineries, Commonwealth Rolling Mills, Newbold's Brickworks, Monier Cement Pipe Works, Electrolytic Refining & Smelting Corp., Australian Fertilizers and Metal Manufacturers Ltd., E.R. & S. Ltd., engines shunt their own sidings and those of the adjacent plants of Australian Fertilizers and Metal Manufacturers, exchanging traffic with the former PWD at exchange sidings.

"To handle the assessment of shunting charges, records and generally assist with the 'paperwork' resulting from the transfer, the N.S.W.R. has erected two new offices at Port Kembla Station to house the clerical staff, whilst Departmental Weekly Notices since January 1 have been full of instructions re charges, etc."

Rolling Stock Parade

An unusual item in our Rolling Stock Parade is the Overhead Line Train of the Victorian Railways. Built in 1916, from converted H class goods vehicles, the train was specially equipped for British Insulated & Helsby Cables Ltd., the firm which supplied and erected cables and overhead wiring for the electrification of the Melbourne suburban lines. Workshops, material and mess trucks, and a specially-fitted guard's van (for the supervisor) comprise the train, which is now operated by the V.R. as a mobile maintenance unit. (Block kindly lent by V.R.).

(Continued from page 1)

State, minded. They require an Australian transport system.

4. Unified control need not mean complete centralisation of management. British Railways are organised in six regions which have a large measure of individual freedom . . . but all technical services such as civil, mechanical and electrical engineering, research, stores and material purchasing, operating and commercial policy-making are centralised, including design of motive power and rolling stock.
5. "Australia is the home of one people, not six. Her transport system must be redesigned to meet the new realities, freed from the 'settlement' restrictions of days long since passed into history."

Before sailing in the "Orion" for England on June 16, Mr. Elliot said he had never seen any railway system so badly off for equipment, materials and technical staff, even in Britain during the war, as were the Victorian Railways. Colonel Payne said that if he had anything to do with the Australian Army, he would insist upon gague unification "immediately" in the national interest.

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Railways in Australia

and

A.R.L.H.S. BULLETIN

The Magazine about Australian Trains

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Vol. II, No. 8 August, 1949.

NEW DIESEL-ELECTRICS FOR PORT KEMBLA.

Australian Iron & Steel Ltd.

By J. L. N. S.

The proposed 85-ton Diesel-Electric locomotives which have been designed by A.I.S. for use at Port Kembla are to be of the end cab type, mounted on two four-wheel bogies, making a B + B wheel arrangement, and with the single power plant will be similar to the standard Baldwin D.E. switching locomotive.

They are to be equipped with eight cylinder 4-cycle supercharged Diesel engines, generators, traction motors, and control equipment, purchased from the English Electric Co., of Bradford, England. 800 h.p. will be available at 750 r.p.m.

With the exception of the above items the locomotives will be entirely constructed and assembled in Australia, this being the first time that this type has been locally built.

The overall length of the loco. will be 41 ft., width 9 ft. 3 ins., and height 14 ft., with a fixed wheel base of 7 ft. 6 ins., and overall wheel base of 30 ft. 6 in., and as they are mounted on bogies they will be able to negotiate the minimum radius curves at the Steelworks of 4 chains with ease. Wheels will be 44 ins. diam., and the axle load 21½ tons.

The bogies are to be of equalising type with plate frames and outside axle boxes. The Westinghouse brake equipment to be fitted is of the A-6 type, each bogie having two 10 in. x 8 in. brake cylinders, and operated by a A-6-PD pedestal mounted brake valve. Compressed air is to be supplied by a 4ZD compressor driven by the main engine. Auxiliary equipment will consist of electro-pneumatic motor contactors, pneumatic sand ejectors, windscreen wipers, and type "A" pneuphonic horn.

The maximum tractive effort at starting will be 57,000 lbs., at 30% adhesion, as compared with 24,340 lbs. for the 60-ton steam locomotives at present in service, so that the steam loco., which haults a train of five loaded 60-ton ore waggons of 400 tons from the Jetty to the Blast Furnace, two miles, is overshadowed by the D.E., which will haul nine waggons or 720 tons. The ruling grade is 1 in 33, together with six-chain curves.

The first order is for eight locos., numbered D1-D8, and these are to be used primarily for hauling coal from the various collieries but eventually they are to handle much of the switching and hauling at the Steelworks. D8 will have different gear ratios and be capable of higher speeds.

The advantage seen in Diesel-Electric locomotives is their ready availability, they can be quickly started from cold, and operated for long periods with a minimum of maintenance.

Other details are:—

D1-7: Gear ratio, 18:6:1: Tractive effort; Start, 57,000 lbs.; 10 m.p.h., 24,500 lbs.; 21 m.p.h., 5,800 lbs.; 31 m.p.h., —.

D8: Gear ratio, 12:5:4:1; maximum rating; Start, 50,000 lbs.; 10 m.p.h., 22,700 lbs.; 21 m.p.h., 8,200 lbs.; 31 m.p.h., 4,500 lbs.

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Road, South Melbourne, S.C.5, Victoria.
Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert

S.A.R. BEATS COAL SHORTAGE BY COAL-OIL CONVERSION

The South Australian Railways decided against any general conversion of locomotives to oil-burners because of the cost of conversion and the excessive cost of operation on wholly imported fuel oil. To meet the recurring coal crises, the Department experimentally equipped Engs. 500 (4-8-4 type) and 708 (2-8-2 type) in May with auxiliary oil burners fed by gravity from a tank located in portion of the tender coal space, so that either coal or oil fuel, or both in combination, can be burned without extensive and costly modification of the firebox involved in full conversion to oil-burning. This arrangement proved so satisfactory under test that the Department authorised conversion of 38 broad gauge locomotives to dual oil-coal burning to meet the present emergency.

They comprise all ten 500-B class and twelve 520-class 4-8-4's, three each of the 600-C and 620-class 4-6-2's, five 700-class 2-8-2's, and five 720-B class 2-8-4's, all of which were converted by the middle of July. In addition, nineteen narrow gauge T-class 4-8-0 locomotives have been converted and further conversions may be necessary as a minimum of twenty-five locomotives are required on the Peterborough Division alone to fully cope with the expanding Leigh Creek coal traffic.

Use of supplementary fuel oil with coal reduces consumption to approximately one-third of normal and enables scheduled loads to be hauled irrespective of coal quality. The fuel oil gravitates from a 1,500 gallon tank to two burners located inside the firebox on either side of the firedoor, from which it is sprayed over the coal by steam jets. The oil feed rate and steam jet pressure can be regulated by the fireman as required, and the intense heat generated ensures combustion of even Leigh Creek coal, leaving only a fine ash residue, with complete elimination of clinker.

The equipment is quickly and easily fitted at Islington shops at the rate of one locomotive per day and the tank may be rapidly disconnected and removed to restore the full bunker capacity when an emergency period ends. As the fuel oil is sprayed on to a coal bed of almost incandescent heat, no expensive refractory brickwork is required to protect the firebox plates as in a normal oil-burning locomotive. By this means the S.A.R. is maintaining a skeleton freight train service besides meeting all requirements for transport of Leigh Creek coal required to keep South Australian industry working and domestic users supplied with electricity.

Down Bairnsdale freight, Victorian Railways, at Stratford on the Gippsland line, hauled by a D3 class 4-6-0. John Buckland snapped this train at Easter, 1948. His companion, standing beside the loco, was Frank Shennen, Managing Editor of our eminent contemporary, "Truck and Bus Transportation," to whom we are indebted for the block.

S.A. PLANS TO ELECTRIFY SUBURBAN SYSTEM

The South Australian Premier (Mr. Playford) announced on June 11 that the commision of enquiry into the proposal of the Railways Commissioner (Mr. Chapman) to electrify Adelaide suburban lines, favoured adoption of the plan, involving approximately 53 route miles.

Briefly, the plan provides for electrification of all existing suburban trackage — lines to Belair, Marino, Outer Harbour, Semaphore, Henley Beach, Northfield, together with several short industrial branches, at a cost estimated at £3,824,000. In addition, the present single tracks from Woodville to Henley Beach and from Goodwood to Marino will be duplicated and the old Holdfast Bay Railway route from North Terrace to Glenelg will be reconstructed as a double track electric line and extended to link with the Henley Beach line to form a loop. The project has now been referred to the Public Works Committee.

OBITUARY

Mr. Frederick Mills, Chief Mechanical Engineer of the Western Australian Railways since 1940, collapsed suddenly and died in Perth on June 22. He was aged 51, and was principally concerned in the design of the wartime Australian Standard Garratt Locomotive. He recently returned from a visit overseas to arrange the purchase of additional locomotives for the W.A.G.R.

Vic. Govt. Considering Elliott Report on Transport

The report of Mr. John Elliott and Col. A. C. Payne, of British Railways (Southern Region) on transport generally, and the development of the Victorian Railways in particular, has been presented to the Minister for Transport (Mr. Kent Hughes) and is now under consideration by Cabinet. Only meagre details are at present available as the report has not yet been made public, but it is already apparent that Mr. Elliot has recommended some radical changes in the administration and financial policy of the Victorian Railways, besides the establishment of a Victorian Transport Authority to take over the assets of the railways and all metropolitan and urban tramways and bus transport.

Mr. Elliot recommends that the proposed Authority should be the sole instrumentality for provision and co-ordination of all public transport, other than long distance road transport, for which it should, however, be the controlling body. The suggested Authority would be comprised of a number of Boards:

- A Tramways and Omnibus Board, which would absorb all bus lines operating within a 15-mile radius of Melbourne and all urban transport (including provincial tramways at present operated by the S.E.C.) throughout the State.
- A Railways Board to control and operate all railways and in co-operation with the Tramways and Omnibus Board to co-ordinate rail and road services outside the metropolitan area.
- A Road Transport Board to control and license private road transport operators. (This Board would in effect take over the several licensing functions of the Country Roads Board. Transport Regulation Board, Melbourne City Council, Motor Registration Branch, and other bodies.—Ed.).

Other principal recommendations are summarised as under:

Railway branch lines not justifying a daily service to be closed and the traffic diverted to road transport.

Raising of railway passenger and freight charges to return additional revenue of between £2½ million and £3 million per annum and correlation of rail and road transport charges on an economic cost basis.

Creation of an independent tribunal to determine transport charges, adequacy of services, hear appeals for and against road licensing decisions of the Road Transport Board and complaints generally regarding the services and charges of the Transport Authority.

Immediate formulation and implementation of a ten-year plan to rehabilitate and modernise the Victorian Railways system at a cost of approximately £70 million, including £35 million for locomotives and rolling stock, £10 million for permanent way improvement and strengthening, level crossing elimination, grade easement, signalling and interlocking, etc., and £25 million for new works, such as stations, bridges, track duplication, locomotive and freight terminals, yard reorganisation and extension and possible electrification of the Geelong and Seymour main lines, if further investigation warrants it. (The Government has subsequently announced in anticipation of the report of the Parliamentary Public Works Committee that the Geelong line, and possibly other country main lines, will be electrified.—Ed.).

Changes in the administrative set-up, technical services, etc., of the Railways Department, involving locomotive and rolling stock design, workshop practice, operating and commercial policy, advertising and publicity, etc.

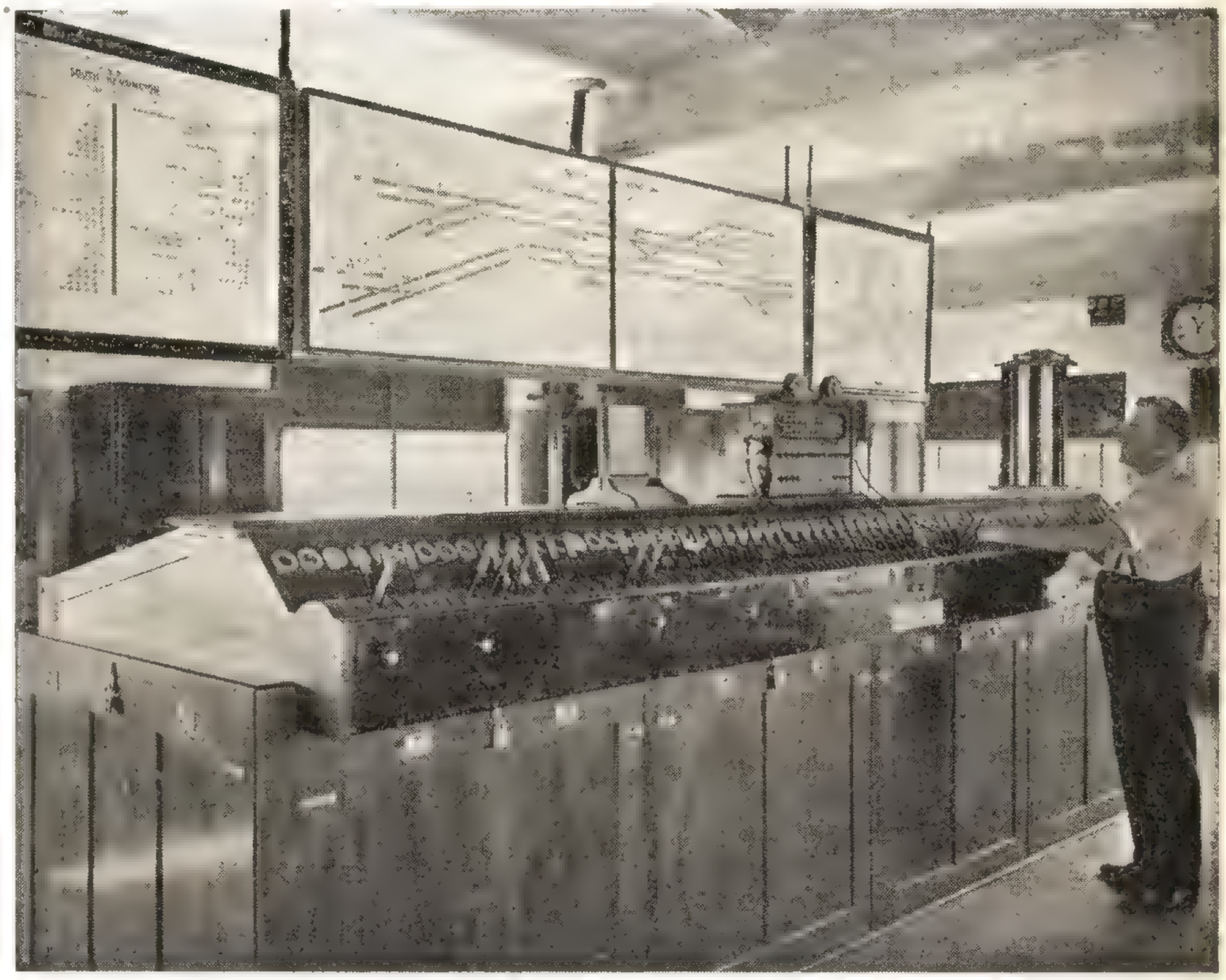
Removal of the Melbourne Freight Station and yard to a new site, probably at South Kensington, and removal of electric car storage sidings from Jolimont Yard to North Melbourne.

Resumption of portion of the land now occupied by Jolimont and Melbourne Yards for development for commercial purposes and roofing of the remainder of Jolimont Yard adjacent to Princes Bridge.

Detailed planning for an underground railway system to traverse the city area, to spread the distribution of peak passenger traffic and relieve the intolerable congestion at Flinders Street Station.

Mr. Elliot stressed the necessity for safeguarding the proposed Transport Authority from direct political control and interference. The Authority should consist of a full-time chairman, four members and two part-time members and should be broadly representative and designed to meet current needs and plan for future requirements on sound lines. The capital assets of the Victorian Railways and the Melbourne Metropolitan Tramways Board should be vested in the proposed authority. He specifically recommended that the finances of the Victorian Railways should be separated from State consolidated revenue and transferred to the authority, which should be responsible for major policy and capital expenditure, subject to the approval of Parliament. The present loan liability of the Railways Department should be reassessed in relation to the present position.

Mr. Elliot criticised several aspects of railway administration, financial policy and operation, particularly meal



Interior of South Kensington signal box, a modern suburban installation on the Victorian Railways. (Block courtesy V.R.)

services for passengers and unpunctuality. "Unpunctuality," he said "is accepted too readily as inevitable on the Victorian Railways. Punctuality on a railway should be second only to safety." He made these points in a general summing up of the Victorian Railways:

"The railways are gradually 'running down' because of lack of staff, maintenance and renewals and finance for capital works . . . Competition between trams and trains in the metropolitan area exercised a 'malignant influence' on services and traffic receipts . . . as competition in transport did not necessarily mean better, or cheaper, services, but unified control, properly administered, meant progress. . . . The two things the public disliked most about the railways were dirt and unpunctuality, and the Victorian Railways were falling down badly on both counts . . . The contrast between the modern air-conditioned cars and the general run of passenger equipment was 'startling.' . . . Every effort should be made to staff and run the air-conditioned buffet cars now lying idle . . . The A2-class engines were worn out and obsolete and should be replaced immediately by the recently-designed R-class . . . ." (The Commissioners subsequently have announced that tenders called for construction of fifty R-class 4-6-4's will close on August 3. These are additional to the twenty already on order from Clyde Engineering Co. Ltd.—Ed.).

Mr. Elliot praised the Victorian Government Tourist Bureau—"a highly efficient organisation"—and many other features of the railway service and administration, which he said, "was carrying on as best it could under extraordinary difficulties."

FREAK FLOOD DAMAGE. On N.S.W.R. and S.M.R.

The phenomenal rains in June caused unparalleled flood damage to railways in the Central Coast district of New South Wales, particularly in the Hunter Valley, in the vicinity of Maitland, where flood waters rose so rapidly that whole trains and several locomotives were almost completely submerged. Considerable delays to trains and damage to tracks through flooding, washouts, landslides and subsidences were caused in the Sydney metropolitan area; near Katoomba and Zig Zag on the main West; on the Camden and Kurrajong branches and at many places on the Newcastle ("Short North") and the main North and North Coast lines. The Moss Vale-Unanderra line was closed by landslides from June 18 to June 28. First train to pass through Maitland after the flood waters had subsided sufficiently on June 27 was the down Wallangarra Mail. In the interim, an emergency daily passenger service was operated each way between Sydney and Werris Creek, via Mudgee and Binnaway. Considerable damage was caused to private colliery railways in the Newcastle district and the South Maitland Railways Ltd. main line from East Greta Junction to Cessnock. Repairs to damaged tracks and structures may take many months.

DETAILS OF S.A.R. DIESEL-ELECTRIC SHUNTERS

Through the courtesy of the Chief Mechanical Engineer, South Australian Railways, we are able to give details of the first diesel-electric shunting locomotives ever designed and built in Australia. They are Nos. 350 and 351, designated as 350-class, with the B + B wheel arrangement, designed and built at Islington shops in association with the English Electric Co., who supplied the prime movers and other components.

The locomotives were delivered during May, and after preliminary testing and crew training, were set to work in Mile End Yard. They have an English Electric Co. 6 KT 350 b.h.p. diesel engine direct coupled to a generator, which supplies current to four traction motors driving each axle through conventional spur and pinion gearing. The wheels are 36 in. diameter. The locomotives are of the cab-at-one-end type designed specifically for shunting service, but capable of road service. (They have been used in suburban service during the coal strike on Port Adelaide and Marino tracks.—Ed.) Two fuel tanks suspended from the underframe carry 300 gallons of distillate and the radiator system for engine cooling has a capacity of approximately 75 gallons of water. The starting tractive effort is 23,400 lb. with 4.6 factor of adhesion. Bogie wheelbase is 7 ft. and they are spaced at 19 ft. between centres, making the total wheelbase 26 ft. The total length over couplers is 37 ft. 10 in., and the roadworthy weight is 49 tons 10 cwt., equally distributed. Maximum height from rail over the cab roof is 13 ft. 3⅛ in. The locomotives are equipped with shunters' steps and platforms at each end, with entrance to the commodious cab from a door in the centre of the rear platform.

(Continued on page 19)

Your Favourite Photo

Up Western freight passing Lithgow Coal Stage on the New South Wales Railways, hauled 53 and 55 class locos. John Buckland took this photo in August, 1940. (Block by courtesy "Truck and Bus Transportation.")

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

THE WAITING ROOM—
Letters to the Editor

The Editor,
Railways in Australia.
Dear Sir,

Some eighteen months ago, I received from the Public Relations Officer of the N.S.W. Railways an excellent photo of a D57 class mountain type loco working an Up goods trains at Emu Plains, and, according to the information on the back, hauling a 2,000-ton test load of coal; the year 1936. The photo depicts the train stopped on the long, sweeping curve leading to Lapstone, with the loco crew and officials grouped in front of the loco. Stamped on the back of the photo are the words: Chief Mechanical Engineer's Branch, N.S.W.G. Rlys., which makes it authentic, more or less. Although I admire these locomotives tremendously, I find it hard, in view of information given in June "Railways in Australia" to believe that they could haul 2,000 tons over the Blue Mountains without assistance, when two D57's, plus a C32 class, were necessary to haul 1,500 tons from Lithgow to the top of the pass at the Zig Zag.

References to a D57 class hauling 2,000 tons on a brake test, and attaining 60 miles per hour on the level with this load, have often appeared in various books and papers, but no indication whatever as to whether a pilot engine was used part of the way—say from Valley Heights to Katoomba. So, incredible as this feat may seem, I am left to believe that it was accomplished by a D57 class loco unassisted. I am finding it hard to believe, also, that the grades on the Lithgow side of the Blue Mountains are more severe than from Emu Plains to Katoomba, where grades as steep as 1 in 33 are encountered. The only reason I can think of for the use of three locos to haul 1,500 tons on the western side, as against one D57 hauling 2,000 tons of the eastern side, is that on the western side the climb starts from a dead start.

Perhaps the information regarding this photograph, or the performance of D57's over the Blue Mountains, can be given through the pages of your magazine.—
Yours, etc.,

F. C. NICHOLS.

Ryde, N.S.W.

The Editor,
Railways in Australia.
Dear Sir,

Regarding your par. on locos 1217 and 2304, in your June issue, I would like to offer the following information:—

Loco No. 1217 has been standing on the small "Rotten Row" at Eveleigh for well over a year now to my knowledge. Late last month (June), it was removed to outside the eastern side of the Eveleigh Loco Repair Shed. All that was left of this veteran was the frame and cab sides.

Loco 2304 had much the same fate, only the frame remaining, and a few fittings piled on the frame. It was removed at the same time as 1217, where, I regret to say, I haven't yet found out.

Late in June P.W.D. 79, and 0-6-0 saddle tank, was received at Eveleigh.

At the present time the following locos are standing dead at the "Rotten Row" at Eveleigh:—

2531—complete except for connecting and coupling rods.
2520—boiler cover and cab roof gone.
1230—boiler gone, a few fittings piled on frame. Cab sides left.

Yours, etc.,

A. B. HAFEY.

Tempe, N.S.W.

Question Box

Arrangements have been made for our Question Box to be handled by a well-known A.R.&L.H.S. member. Questions on any aspect of Australian railway operation may be forwarded; address envelope to "Question Box," c/o Traction Publications, 29 Seymour Gr., Brighton Beach, S.5, Vic. It is regretted that direct answers cannot be posted to correspondents.

Mr. W. S. PEARCE, of Kensington, Vic., asks: Is there any standard formula by which the tractive effort of a steam loco may be obtained?

ANSWER: The tractive effort of a two-cylinder locomotive may be calculated from the following formula:—

$$T = \frac{D^2 \times S \times P}{W}$$

where T=Tractive effort in pounds.
D=Cylinder diameter in inches.
S=Cylinder stroke in inches.
P=Mean effective boiler pressure in pounds per square inch.
and W=Driving wheel diameter in inches.

For a three cylinder locomotive, the answer given by the formula must be multiplied by 1½, and for a four-cylinder locomotive by 2. Mean effective boiler pressure is generally taken as 85% of the boiler pressure, which is close to the actual figure at starting and low speeds. As an example, the V.R. "S" class tractive effort is:—

$$\frac{3 \times (20\frac{1}{2})^2 \times 28 \times 85\% \text{ of } 200}{2 \times 72} = 41{,}675 \text{ lbs.}$$

Mr. PEARCE also asks what are the two flexible hoses on the ends of V.R. electric suburban stock.

ANSWER: One is the usual Westinghouse train pipe; the other is for the pipe connecting the main reservoirs on all motor coaches in the train. When there is more than one motor coach in the train, the compressors work in parallel, and the increased air capacity from the extra main reservoirs is

Queensland Railways "Engine No. 1" (actually No. 13), with contemporary rolling stock, in operation during commemorative celebrations in Brisbane. The train was subsequently placed on exhibition under cover at Roma Street Station, Brisbane, achieving fame last year when homeless families took up temporary residence in the cars. (Block kindly lent by "Truck and Bus Transportation.")

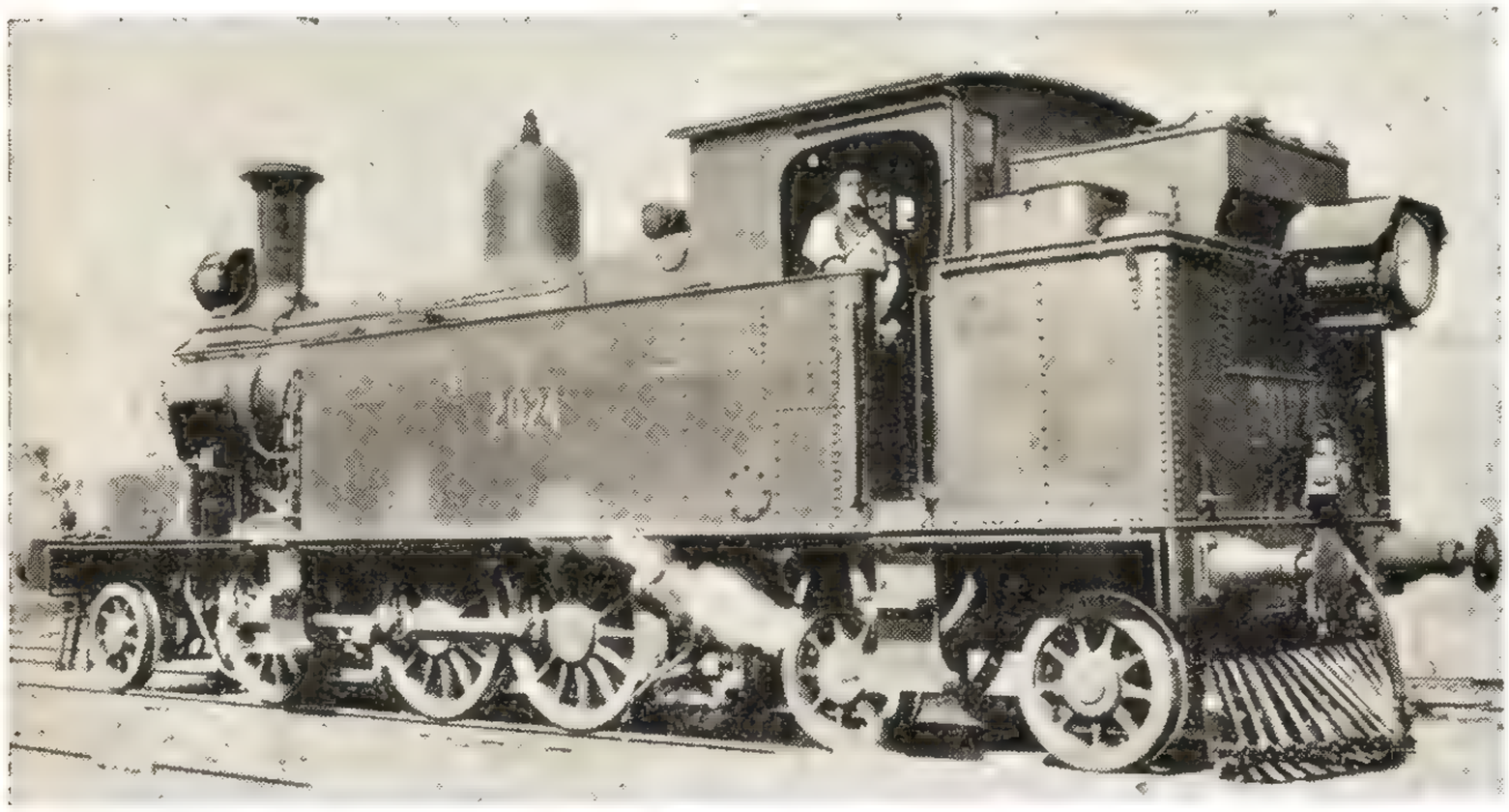
balanced by the extra compressors working together.

On other railway systems, two connecting hoses do not necessarily mean the same thing. On N.S.W.R. suburban stock, the two hoses are part of the electro-pneumatic brake system. On some British Railways stock, one hose is for vacuum brake, the other for Westinghouse.

Mr. R. T. SLOGGETT, of Balwyn, Vic., asks: Which A2 class engines of the present series have been scrapped?

ANSWER: 878, 916, 956 and 970 were scrapped in 1946, and 998 in 1947; 904 was scrapped after the Riddell smash in July, 1947. However, there is now another A2 878, A1 807 receiving this number after it was superheated in 1946. 975 has been condemned, but is still running as a coal burner.

Engine Pictures



Two interesting locos comprise this month's Engine Pictures. Both views are by John Buckland — the tank loco is No. 2024, a Z20 class 2-6-4, equipped with pilots and headlights at both ends for operation on the unfenced Kurrajong branch of the New South Wales Railways. The little Baldwin was a 3 ft. 0 in. gauge 2-4-0 of the Powelltown Tramway, Victoria. Known as "Little Yarra," the loco was built in 1912. The line was abandoned a few years ago. (Blocks courtesy "Truck and Bus Transportation.")

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australia) to the Australian Representati N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

STOP PRESS

New South Wales Railways have called tenders for supply of electrical equipment for 10, 20, 30, or alternatively 40 electric locomotives each of 2700 h.p. They will weigh approximately 108 tons, and if the design is not altered from that of the experimental locomotive now under construction at Eveleigh Shops, will have the C + C wheel arrangement, with a 16-ton a load.

The ten diesel-electric road locomotives on order for the N.S.W.R., and being built at Eveleigh in association with English Electric Co., will be articulated twin units carried on three bogies with the wheel arrangement B + C + B. They will be somewhat similar in appearance, though longer than, the 400-class rail motors.

Commonwealth Railways are considering conversion of their C-class 4-6-0's as well as some NM-class narrow gauge 4-8-0's to dual coal-oil operation, similar to the South Australian conversions mentioned elsewhere in this issue. Four more 55-class 2-8-0's may be converted to fuel-oil burning by the N.S.W.R. to meet the coal crisis.

The third air-conditioned set intended for the Newcastle and Cessnock express services is unlikely to be used for that purpose. Instead it may be used for the Riverina Express service to Albury to supplement the "deep sea" air-conditioned trains, the first of which is ready for testing.

Balanced Wheels for Passenger Cars

By Paul J. C. Friedlander

(Concluded)

Equally spectacular is the riding comfort the Illinois Central Railroad has given its Daylight Special, crack high-speed train that daily covers nearly 300 miles from Chicago to St. Louis in five hours and ten minutes. The new Daylight was put into operation last January, with every wheel of every passenger car precisely balanced. It is the only regular passenger train in service in the country with balanced wheels.

The Daylight cruises at about ninety-five miles an hour, and this writer can report that on a recent regularly scheduled run the Daylight ran much more smoothly with much less vibration, and virtually no sidesway or whiplash at this speed, than any passenger train he has ridden on. Passengers, this one included, walked through the cars without clutching at seats or falling into other passengers' laps.

At 100 Miles an Hour

Even on the car platforms one could stand—at 100 miles an hour—without holding on or bracing one's self. And in the dining car glasses filled to the brim stood steadily, showing only a minimum of vibration, without spilling.

Illinois Central officials generally attribute the comfort of the Daylight to man of the road's Burnside shops in Chicago, where the Daylight was built and its wheels balanced, is a firm believer in balancing. He credits it with removing from this train the whipping and churning and thumping that shake up the average railroad car. He, and all other Illinois Central officials—and apparently their passengers, too,—are so pleased that Mr. MacLeay is now balancing all the line's specialty cars; diners, bar and buffet cars, parlour and observation cars.

Less Wear and Tear

While Mr. MacLeay's prime concern is to give his railroad's customers the most comfortable, smooth and vibrationless ride he can, he finds that the cars his shops have balanced show less wear and tear, require less maintenance on wheels and trucks. He runs a set of wheels 60,000 miles before pulling it into the shop for a checkup.

Most of the weight imbalance, Mr. MacLeay reports, is found in the plates, the flat part of the wheel between the hub and the rim. In his shop when the electrical wheel balancer indicates the exact point of excess weight, instead of grinding off the extra metal, additional weight is added to the wheel at the opposite point to restore the balance.

This is done by first tinning the area and pouring a kind of babbit metal, weighed out to the ounce, onto the inside of the heated wheel. A truck of six wheels can be balanced in a couple of days, at a cost ranging from $8 to $20 a set of wheels and axles.

(Continued from page 4

Electric headlights and marker lights are provided for operation in either direction. Engine compartment is readily accessible for servicing and maintenance by hinged doors in the superstructure, in which the air-intake filters and cooling radiators are set flush. Ladders are provided to give access to the top of the engine compartment. The locomotives are equipped with Waugh type P.24K friction draft gear with a static capacity of 400,000 lb. and automatic couplers only. They are painted bright orange with a chocolate band and roof and black underframe and bogies.

Comrails Finances

The Commonwealth Railways system embraces four separate lines — the standard gauge Trans-Australian Railway from Port Pirie, S.A., to Kalgoorlie, W.A.; the Central Australian Railway from Port Augusta, S.A., to Alice Springs, N.T.; and the North Australia Railway, from Darwin to Birdum, both of 3 ft. 6 in. gauge; and the short Australian Capital Territory Railway from Queanbeyan, N.S.W., to Canberra, A.C.T., of standard gauge worked by the New South Wales Government Railways. Total route mileage of all lines is 2201. The annual report for the year ended June 30, 1948, reveals a loss of £201,973, as compared with a loss of £124,779 for the previous year. Working expenditure increased from £1,224,332 in 1947 to £1,439,017 last year, principally because of increased wages and materials cost. Total revenue earnings of £1,237,044 compares more than favourably with £1,099,553 earned in 1947. Highlight of the report is the significant increase in passenger traffic on the Trans-Australian Railway from 26,627 journeys in 1939 to 43,538 in 1948. Passenger traffic continues to increase yearly on the Central Australian Railway, which is also exceptionally busy with livestock and coal traffic. Freight traffic continues to expand, except on the North Australia Railway. Expansion of the cattle industry in the North, however, may soon be reflected in greater traffic on this section, which when linked with either the Central Australian line, or the Queensland system, or both, will become a strategic railway of considerable importance both commercially and from the defence angle.

N.S.W. TO EXTEND STEAM HEATING OF TRAINS

The N.S.W.G.R. "Southern Highlands Express," which last winter was the first steam-heated train in Australia, has had the heating equipment rearranged, and now has two heaters per compartment. The first trips with the heating in operation this winter were made southbound ex Sydney on May 16, returning next morning ex Goulburn. The equipment is now out of the experimental stage and is operating very satisfactorily, according to Mr. W. G. Lewis, of Westinghouse Brake Co. (Aust.) Ltd., who has been largely responsible for design of the equipment.

The next train to be equipped with

A quaint feature of South Australian Railways working is the operation to and from Islington Workshops of the two horse tramcars, Nos. 5 and 6, which still run during the summer months at Victor Harbour (see notes elsewhere this issue). This occurs whenever overhauls are needed and the hauling is done by one of the rail motors—in this case one of the small type known as "Barwell's Bulls." (From the Australian Tramway Album—photo by Kruschock Studios, Adelaide.)

steam heating will be the "Federal City Express" operating between Sydney and Canberra, A.C.T., and having a consist of two BS steel first-class and two FS steel second-class corridor cars, each with two heaters per compartment, and an RFM second-class car with buffet compartment. This latter was converted from an AB dining car during 1948, and will have three special heaters having a much greater radiating area than those used in the compartment cars.

V.R. TO BUY ELECTRIC POWER IN BULK

To implement the Government policy of making the Victorian State Electricity Commission the sole electricity generating authority, negotiations are in progress for the transfer to the S.E.C. of the Victorian Railways Newport Power Station. The transfer was originally scheduled for July 1, but delay caused by staff problems, including liability for superannuation benefits, etc., have temporarily delayed completion of the agreement.

The original railway power station, now known as Newport "A," was established in 1914 to provide power for Melbourne's suburban electric railway network and Newport workshops. In recent years this station has been modernised and almost completely re-equipped. The S.E.C. has established its own Newport "B" and Newport "C" power stations adjacent. Switching facilities and frequency changing plant have been provided to facilitate the interlocking of supplies in cases of emergency. (Railway power supply has a frequency of 25 cycles in contrast to the more usual 50 cycle A.C. supply.—Ed.)

Under the future set-up, the V.R. will purchase power in bulk from the S.E.C., similarly to the Melbourne Metropolitan Tramways Board, and reticulate it through its own existing sub-stations and cables. Concurrent with the change-over, the S.E.C. will assume responsibility for the capital and interest charges represented by the railway investment. The Commission will, in future, work the railway from near Spotswood to the power station, over which coal (and latterly oil) supplies are transported.

The Commission plans to reorganise the station's coal-handling plant by provision next year of two British-designed coal tar tipplers and a modern conveyor belt system. This will replace the present mechanical handling with travelling coal gantries and grabs, whilst unloading (and therefore turn-around) of coal cars will be speeded up. Each tippler will unload 300 tons per hour at the rate of one car each three minutes. The S.E.C. also hopes to establish a reserve coal supply adjacent to the power station and the nearby River Yarra. A travelling coal gantry has been transferred from the Tocumwal, N.S.W., transfer yard, and will be installed at new coal sidings being built on the site adjacent to River Road. A coal wharf for direct handling of imported coal shipments may later be established in this vicinity. The Commission has ordered two 43-ton diesel locomotives from Malcolm Moore Ltd., Port Melbourne, for working coal trains from the Spotswood transfer sidings and for shunting at the power station.

At present main line locomotives work coal trains direct to the power station yard, and shunting is performed by one of two surviving T-class 0-6-0 locomotives, No. 92 or No. 94, which are the oldest V.R. locomotives still in service.

NEWS IN BRIEF

Tasmanian Railways have increased their order for English electric road diesels from 20 to 32 units, largest single order ever placed for British diesel locomotives. The Oatlands (Tas.) branch line was finally closed to all traffic from June 13, but will not be dismantled for the present.

Queensland has ordered 100,000 tons of rails and 240 tons of fastenings from British manufacturers for £375,000—£200,000 above comparable local prices—to enable continuance of minimum annual relaying of between 30 and 50 miles of track, and to provide for the duplication of the South Coast line from Rocklea to Kuraby. Some second-hand rails may also be bought from the Victorian Railways for the Mount Morgan deviation. (See February issue.—Ed.)

Western Australian Government Railways plan to build a diesel-electric car servicing shop at East Perth.

Victorian Railways will call tenders for a modern ash handling plant for installation at North Melbourne, and will build a coal elevator at Traralgon. First portion of the Heidelberg line duplication — from Ivanhoe to Heidelberg, 1¼ miles — was opened on June 19. Lack of bridge girders for widening the Darebin Creek viaduct, near Alphington, may delay completion of the work indefinitely. Automatic signalling with single-lens "searchlight" signals has replaced mechanical-electrical "lever locking and track control" between Ivanhoe and Heidelberg. Newport shops are now building the first of fifty 50-ton capacity covered hopper cars, to be designated CJ class, for bulk cement traffic. The Department has recently issued two new publications—a booklet entitled "Sidelights on the V.R." and a series of three illustrated data sheets of V.R. locomotives. Copies are available on application from the Publicity and Tourist Services, Room 98, Spencer Street Railway Administrative Offices, Melbourne.

New South Wales Railways propose to design a new standard boiler to be applied to both 35 and 36-class 4-6-0 locomotives, and consideration will be given to adoption of a new cab design and alteration of the regulator operating mechanism to the "pull out" type similar to 38, 57 and 58-classes. New standard station nameplates of the familiar "target and crossbar" type will be supplied for all stations where existing signs removed during the war have been lost, or are in need of replacement. Test signs have been in use at Gordon and Chatswood for several years. Croydon is the first station to be given the new standard markers.

As mentioned in these columns in the May issue, Southern Portland Cement Works, at Berrima, N.S.W., have begun to acquire their own freight cars for limestone transport from the Marulan quarry to the works. At the end of 1948 they bought four standard 60-ton capacity ore hopper cars ex A.I. & S. Ltd., Port Kembla, and six new cars built by Commonwealth Engineering Co. The latter are equipped with Westinghouse brake, without grade control valves, and the former A.I. & S. cars are piped only. Eng. 2532, on hire from the N.S.W.G.R., is working on the Berrima branch between Medway Junction and the cement works.

Experiments conducted by the Queensland Railways some months ago with alternative headlight positions on locomotives culminated in the location of the headlights in the centre of the smokebox door in the new DD-17 design. Two B-18¼ class Pacifics were concerned in the tests, according to Mr. K. Rogers, our Brisbane correspondent. No. 895 had the headlight altered to the centre of the smokebox, similar to the American-built AC-16 engines, and No. 911 retained the light in the normal position on top of the smokebox, but fitted with a shield. The illuminated number panels were removed in both cases. Engine numbers have been in course of removal from headlights for some time in Queensland. Some Mayne (Brisbane) engines now have the road number stencilled on the smokebox front.

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park. Addresses will be found on page one.

Re illustration of T.G.R. diesel railcar on page 19, June issue, Mr. K. Flood, of Launceston, writes: "Waddingtons (now Commonwealth Engineering Co.) not Clyde, built the bodies for these cars, which have Drewery power bogies. The car illustrated is one of the smaller suburban type cars DP 11-14 powered with a Gardner 6LW engine. Main line cars DP 15-16, 20-24 can be identified by larger radiators on roof."

Railways in Australia
and
A.R.L.H.S. BULLETIN
The Magazine about Australian Trains
Incorporating TRAM TRACKS the Electric Traction Monthly

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Vol. II, No. 9 SEPTEMBER, 1949

DIESEL - ELECTRIC TRACTION
Introduction on the S.A.R.

The latest step in the S.A.R., abreast with the trend of railways to-day, is the introduction of diesel-electric power for traction purposes. Two diesel-electric locomotives, Nos. 350-351, designed for use both for shunting and transfer duties, have recently been completed at the S.A.R. Workshops, Islington.

The diesel engines and electrical equipment were manufactured by the English Electric Company Ltd., in England. This equipment has been assembled on the underframe and bogies designed and built at Islington. Power is supplied by a diesel engine directly coupled to a generator which supplies the current necessary to drive the four axle-hung motors mounted on the two bogies. These motors are directly geared to the axles by single-reduction spur gears. The four-wheeled bogies with 7 ft. wheelbase enable the locomotive to negotiate curves of 150 ft. radius. The locomotives are 37 ft. 10 in. inside coupling points, with 19 ft. bogie centres. The roadworthy height of each is 48 tons, with a starting tractive effort of 23,400 lb. A high tractive effort at low speeds makes these locomotives particularly suitable for shunting purposes where loads have to be accelerated quickly.

The maximum speed of the locomotive is limited to 45 m.p.h.

The locomotives are divided into three separate compartments, viz:—the cab, generator compartment, and engine and radiator compartment. The 6-cylinder engine operates on the 4-stroke cycle, developing 350 b.h.p. at 680 r.p.m. The engine is water-cooled, the water after passing through the engine is pumped through the two radiators in series, one mounted on either side of the engine housing at the front end of the locomotive. Air is drawn through the two radiators and expelled through an opening in the roof by a vertically-mounted fan driven by an electric motor mounted on the floor. The lubricating oil is also cooled by passing through a section of the radiator mounted on the left-hand side. Fuel is supplied from two tanks mounted underneath the underframe between the two bogies and transferred to the engines by compressed air. The engine is mounted on rubber pads and is supported at three points on the locomotive underthe engine bed-plate of any stress which would normally develop as a result of underframe flexure.

The underframe is of fabricated construction and is designed to withstand the severe shocks and buffings to which a shunting locomotive is subjected. The fabricated design allows a considerable saving in weight as compared with a cast frame.

The bogie frames are also of fabricated construction. The two motors per bogie each have sleeve type sus-

(Continued on page 23

IMPORTANT
"Tram Tracks" Subscribers
See page 19

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

MODERN AIR-CONDITIONED TRAIN FOR NORTH QUEENSLAND

For the first time in Australia, we publish details of the projected new air-conditioned train for the Brisbane-Cairns tourist traffic. Designed by Queensland Railways engineers, the train will be the finest and best-equipped yet provided on the 3 ft. 6 in. gauge in Australia.

Comprised of 13 cars totalling an estimated 412.5 tons, the train will be hauled by a 137-ton Beyer-Garrett locomotive of the 4-8-2 + 2-8-4 wheel arrangement with a maximum axle load of 9.5 tons and developing 32,800 lb. starting tractive effort. Ten of these locomotives have been ordered from Beyer, Peacock & Co., for a cost originally estimated at £450,000. They will be the most modern yet built for the 3 ft. 6 in. gauge in this country; ranking with the heaviest and most powerful. Total wheelbase will be 81 ft 8½ in., and overall length 90 ft. The design is being worked out by Beyer, Peacock & Co. specifically to suit the difficult operating and climatic conditions of the Queensland North Coast Railway and it is understood a mechanical stoker will be provided. The Belpaire firebox will be of welded design and all but coupled axles will be provided with roller bearings. Grease lubrication will be used. The first of these locomotives are scheduled for delivery early in 1951, when it is anticipated the train will be completed.

The 13 car consist will comprise power car, containing the power supply for air-conditioning, cooking and lighting; two second-class sleeping cars with three-berth compartments (one will include four two-berth compartments for dining car staff and the other a conductor's compartment and a shower); one second-class sitting car with 32 seats, child welfare compartment and lavatories; one buffet car seating sixteen at a buffet counter and having storage space for the adjacent dining car, which will seat 24 passengers. A lounge car equipped with a piano will seat 26 passengers and include a compartment for the train hostess, who will supervise the child welfare compartments. A first-class sitting car for 24 passengers, with child welfare and lavatory compartments; a first-class sleeping car with three two-berth and two single-berth compartments, shower and conductor's compartments; three first-class sleeping cars each with seven two-berth compartments and a brake van with two two-berth compartments for train staff and baggage compartment.

Total passenger capacity of the train is to be 136, comprised of 24 sitting and 50 sleeping in first-class and 32 sitting and 30 sleeping in second-class. The train will be operated on an extra fare surcharge basis additional to the existing "Sunshine Express" trains. Both dining and buffet cars will be attached throughout the journey. The train will be all-steel construction with interior panelling of native Queensland timbers. Lighting will be of fluorescent type. The two child welfare compartments are intended for the use of mothers with young children. The decorations will be specially suitable for children, and will be identical in both first and second-class cars.

The single-berth compartments, like the two-berth ones, will be panelled with specially selected polished veneers. Floors will be carpeted. The two single-berth cabins can be converted for use as a two-berth "roomette" as required. Sleeping berths in the one-passenger compartments will be folded against the wall during daylight, when folding chromium fabric-covered chairs with adjustable footrests will be provided. Extra large wardrobes, folding washbasins and a large mirror will be features of these compartments, which will have large windows for maximum view of lineside scenery. The two-berth compartments will be furnished similarly, but will have less floor space, while for daytime use the lower berth will remain in position as a seat with arm-rests each end and in the middle. Nine inches clearance will be provided under the lower berths for luggage stowage.

The first-class sitting car will be of the compartment type, as will the second-class sitting car. The dining car will be finished in silver ash with matching chair coverings, carpet and other equipment. The all-electric kitchen will be finished in stainless steel and white enamel, with full cooking facilities and refrigeration space. The buffet car, which will give snack service from 6 a.m. to 10 p.m., will be finished internally in

Brighter railways seem to be the aim of the S.A.R. authorities, whose new diesel-electric shunting locomotives are painted bright orange with chocolate band; the roof also is chocolate, underframes and bogies are black. No. 350 is shown above — see full description on page 1 (Official S.A.R. photo.).

W.A.G.R. PLANS FIRST C.T.C. IN AUSTRALIA

Western Australian Government Railways plan to spend more than £500,000 on works and materials required to establish centralised traffic control (C.T.C.) for the South-West line between East Perth and Brunswick Junction, 98 miles. Because of the growing traffic, including most of the coal output from the Collie field, the existing signalling of the predominantly single-tracked South-West line, particularly on the bottleneck between East Perth and Rivervale, and from Armadale to Brunswick Junction, has become inadequate to cope with further requirements. Extension of duplication is at present impossible of achievement because of the material shortage and would involve construction of a new bridge over the Swan River, and be vastly more expensive — an estimate for duplication with automatic signalling throughout was £1,340,000. C.T.C. will be quicker to install. Sixteen miles from Riverdale-Armadale is already double-tracked.

C.T.C., which came into prominence in the United States before the recent war, has been widely applied during the intervening years in that country and Canada with results giving something approximating 75 per cent. of double track capacity, lessened delays on account of crossings and larger manpower savings. It has been applied successfully in New Zealand and a party of W.A.G.R. traffic employees will be trained in New Zealand in the practice of C.T.C. operation. The control centre will in all probability be located, at East Perth. (There are many places throughout Australia where points and signals and even crossing loops, are remote-controlled from adjacent signalboxes, but these are not C.T.C. which embodies complete centralisation of control over an entire line of almost unlimited length, by means of automatic colour-light signals, and electrically-operated points, worked from a diagrammatic control panel by one operator. Routes are selected, set-up, locked and proved by electric relay interlockings actuated by coded signals transmitted by line wires.—Ed.).

Four-Engine Working on N.S.W.R. Lithgow — Zig Zag

Following a test working of 1,500-ton loads from Lithgow to Enfield Yard (Sydney), and subsequently, a 2,000-ton coal train from Blackheath to Sydney, last May, the N.S.W.G.R. on July 26, introduced a new 1,500-ton through ruling grade load for a 57-class engine between these points, assisted in front and rear between Lithgow and Zig Zag and in front from Zig Zag to Blackheath. Regular working of such trains by two 57-class 4-8-2's or by a single 57-class assisted in front by **two** super-heater 50-class, 53, or 55-class "standard" 2-8-0's and in back by another "standard" freight engine has been authorised. This is the first occasion in Australia where use of three engines coupled in front of a train has been introduced as regular working.

The vehicle limit for such trains, which must be composed mostly of cars with grade control valves, is equal to 65 four-wheelers, including a bogie brake van. If traffic requirements require 1,500-ton trains to be sidetracked at Penrith, the load must be reduced to the previous 1,100-ton limit, unless a pusher 24-class yard engine is available, in which case

Newcastle Express Praised By British Rail Chief

During a short visit to Sydney and Brisbane in June, after reporting on the Victorian Railways, Mr. John Elliot, Chief Regional Officer of British Railways (Southern Region) and his assistant, Col. A. C. Payne, were accompanied by the Railways Commissioner (Mr. F. Garside) and the Chief Mechanical Engineer (Mr. H. Young) on a return trip on the Sydney-Newcastle express. Mr. Elliot praised the train and its running in the following terms: "The Sydney-Newcastle Express is as fine a train as any we have in Britain to-day, or in Europe, if not superior." Mr. Elliot also praised the Sydney electrics and the modernity and attractiveness of stations and gardens.

chrome and enamel. It will be of the longitudinal counter type with fixed stools. With both dining and buffet cars included in the consist, the train can be scheduled independent of wayside refreshment rooms, thus eliminating many station stops of long duration.

Second-class sleeping compartments will have three tiers of berths and will be panelled in silky oak. Folding washbasins and hanging fixtures for clothing will be provided. Because of the length of journey—1,043 miles from Brisbane to Cairns—a club-lounge car is included in the consist. It will feature individual chairs, tables, etc., and a piano will be included in the equipment. Shower compartments in each of the first-class and second-class sections are being provided to give every possible service to passengers.

(Order for Beyer-Garratts reported increased to twenty—Ed.).

INTERESTING BOOKS for RAILWAY ENTHUSIASTS

"WAR ON THE LINE" (10/6)—Deals with activities of the Southern Railway during the recent war.
"THE NORTH LONDON RAILWAY" (4/6)—Tells about the history and activities of an interesting little system.
"THE LINE THAT JACK BUILT" (2/2— These two booklets deal with "THE WORLD'S SMALLEST PUBLIC RAILWAY" (3/7)— the R.H. & D.R. in England
"SEMAPHORE SIGNALS" (2/2)—Tells about signalling systems in Gt. Britain.
"TRAINS ILLUSTRATED" (1/3)—An interesting quarterly magazine, published in England.
"LOCOMOTIVES THRU THE LENS" (10/9)—Gives photos and details of British locomotives since grouping.
"RAILWAYS OF BRITAIN" (23/6)—Tells about the history and present activities of British Railways.
"TRAINS ANNUAL," 1949 (10/6)—This interesting book gives information of railways in Britain and elsewhere.
"TITLED TRAINS OF GREAT BRITAIN" (10/9)—Gives interesting information about "named" trains in G.B.
"STUDIES IN STEAM" (5/-)—Contains photos of famous British trains.
"RAILWAY DIGEST" (3/6)—An interesting quarterly publication, which gives condensed articles about railways, from all parts of the world.
"RAILWAY HOWS" (2/10)—This booklet shows how various railway equipment works.
"BEST RAILWAY PHOTOS," No. 9 (2/10)—Mr. Kindig displays his talents as a superb photographer of railway trains in U.S.A.
"STANIER PACIFICS OF THE L.M.S.R." (5/-).
"RIDE WITH THE DRIVER" (8/6).
"BRITISH PASSENGER LOCOMOTIVES" (4/3).
"BRITISH ELECTRIC TRAINS" (7/2).
"LOCOMOTIVE PRACTICE AND PERFORMANCE in the 20th CENTURY" (31/-).
"LOCOMOTIVES OF THE L.N.E.R." (10/9).
"LOCOMOTIVE EXCHANGES" (17/9).
"McINTOSH LOCOMOTIVES of the CALEDONIAN RAILWAY" (5/-).
"KING ARTHURS and LORD NELSONS of the SOUTHERN RAILWAY" (5/-).
"KING and CASTLES of the GREAT WESTERN RAILWAY" (5/-).
"A.B.C. OF BRITISH LOCOMOTIVES" (2/10), No. 1 (Western.
"A.B.C. OF BRITISH LOCOMOTIVES" (2/10) ea.)—No. 1 (Western Region), No. 2 (Southern Region), No. 3 (L.M.S.R. Region), No. 4 (L.N.E.R. Region). (These booklets give the new numbers of British Railways locomotives since Nationalisation.)

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1,400 tons can be taken up Kingswood bank. If a 32-class or heavier engine is available as pusher, the full load can be worked through to Enfield, subject to certain conditions to prevent delays to other traffic.

Simultaneously, with the new working arrangements for Western coal traffic, sectional running times and time allowances for locomotive purposes have been revised and a new 800-ton through running grade load set for trains worked by any "standard" freight engines, assisted front and rear to Zig Zag and in front to Blackheath, and if sidetracked at Penrith, in rear up Kingswood bank. If no pusher is available at Penrith, only 700 tons can be taken forward.

In connection with the report of the working of a 2,000-ton test train (see July issue) further information reveals that a 53-class helper was attached ahead of the 57-class train engine at Emu Plains (near Penrith) to minimise delays to other trains. Owing to insufficient air-compressor capacity of the leading engine, the train broke in two at Wentworthville. Unless and until cross-compound air compressors become standard on all freight engines, further 2,000-ton loads are unlikely to be run, except in case of traffic requirements necessitating. Because of the present shortage of 57-class engines, our correspondent states that the three-engines-in-front and one-at-rear working is becoming a familiar sight (and sound!) between Lithgow Yard and Zig Zag.

Loco. Water Treatment Unit Adopted by V.R.

Two types of water treatment units have been initially applied to X-class engines in recent months. As engines pass through the shops for overhaul, all steel boilers will in future be installed in engines equipped with tender water treatment units of one or other of the two types now being used. No. 47 has a treatment unit known as T.I.A. (Traitement Integral Armand) which is standard equipment on locomotives of the S.N.C.F. (French National Railways Co.) and which has recently been adopted by British Railways (Southern Region) for the revolutionary new "leader" class tank locomotives. A similar device has been noted on the tender of No. 27 and other X-class engines.

Both types have a similar function—to make alkaline the water in both boiler and tender tank, by automatically injecting sufficient chemical compound at each filling of the tank. The amount is determined by daily test of samples of water from both boiler and tender tank, and its particular composition based on the chemical properties of the water normally supplied for locomotive purposes. The effect is to neutralise the ill-effects of oxygen and carbon dioxide present in the water and to precipitate all scale-forming constituents in the form of a non-adhering mud. The water in both tender and boiler is reduced to zero hardness and so corrosion is eliminated. The mud settles in the firebox water legs in the vicinity of the foundation ring and is removed by periodically operating the manually controlled blow-down valves now being widely applied to all steel-boilered locomotives. This is done approximately every 30 miles whilst running for approximately 30 seconds.

Experience on French railways has demonstrated that boilers affected by scaling are soon completely freed from it, with consequent improvement in maintenance, operation and availability of the locomotives. The cumulative effect is to increase the permissible periods between boiler washouts from approximately every seven days (more frequently in some "bad water" districts) to as much as a month and over. The bad effects of priming—and consequently loss of power output—are almost eliminated. Full scale use of water treatment during the past ten years on the Commonwealth and South Australian Railways has reduced boiler maintenance problems to a remarkable extent, as both these sytems were previously heavy sufferers from the bad effects of impurities in their locomotive water supply.

NEW STEAM LOCOS. FOR TASMANIA

Following the recommendations in the Chapman report on the Tasmanian Government Railways (see September, 1948, issue) two new classes of steam locomotives—a heavy dual service 4-8-2 type and a medium 4-6-2 type for passenger service—has been ordered from British builders.

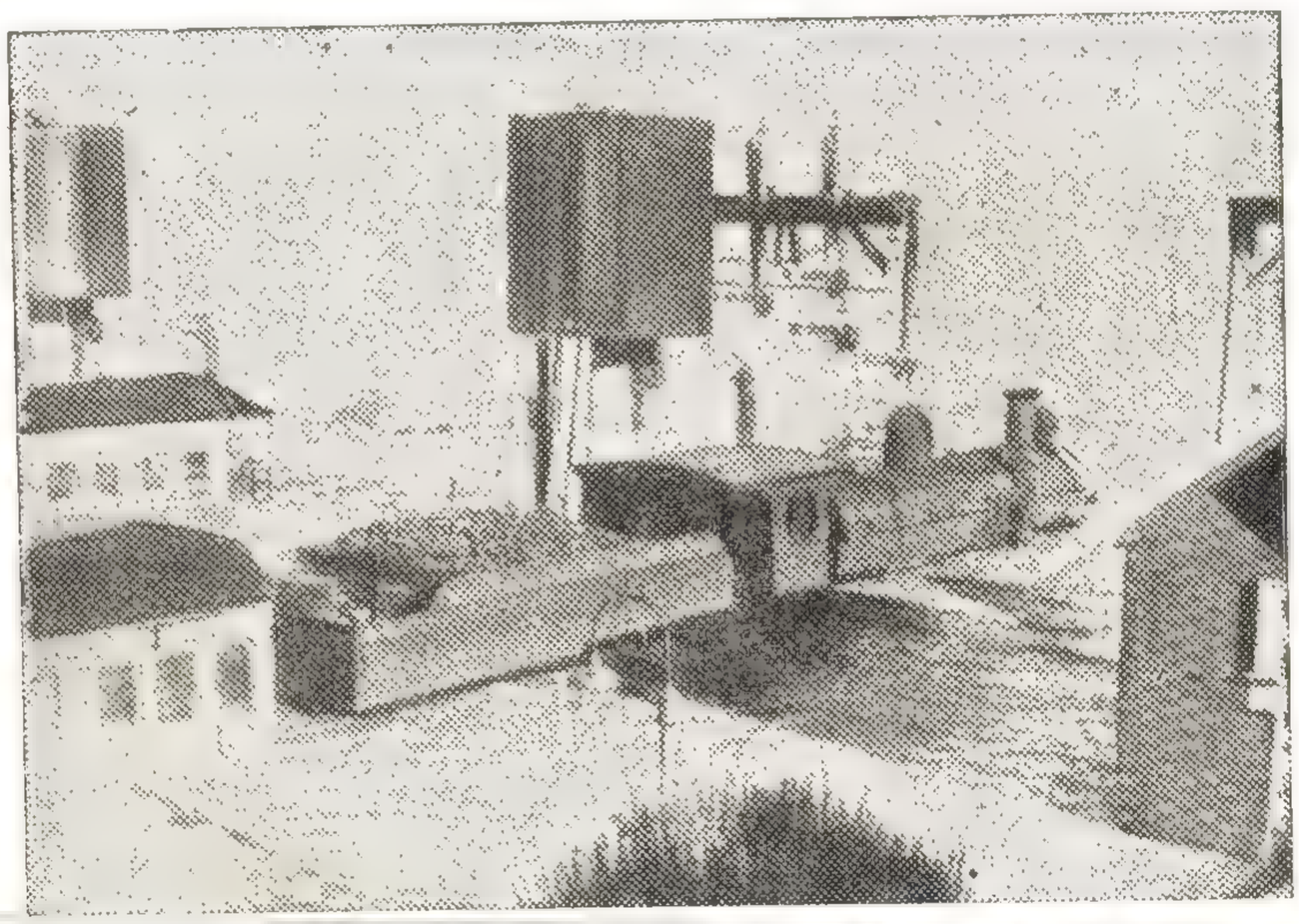
Class and Type	H 4-8-2	M 4-6-2
Service	Dual	Passenger
Max. axle load	13 tons	10 tons
Cylinders (2 outside)	18 x 24 stroke	16 x 24 stroke
Coupled wheels, diam.	48 in.	55 in.
Bogie and Trailing Truck wheels, diam.	28½ in.	28½ in.
Rigid wheelbase	13 ft. 3¾ in.	10 ft. 6 in.
Boiler Pressure	200 p.s.i.	180 p.s.i.
Tractive effort at 85 per cent. B.P.	27,540 lb.	17,100 lb.
Heating Surface—		136.5 s. ft.
Firebox and Arch Tubes	176 s. ft. (appx.)	601 s. ft.
Tubes	408 s. ft. ,,	371 s. ft.
Flues	1040 s. ft. ,,	1108.5 s. ft.
Total Evaporative	1624 s. ft. ,,	265 s. ft.
Superheater	298 s. ft. ,,	1573.5 s. ft.
Combined total	1922 s. ft. ,,	23 s. ft.
Grate area	34 s. ft.	1373.5 s. ft.
Tender (4-wheel bogie) Coal	6 tons	6 tons
Water	4,000 gallons	4,000 gallons
Tender wheel diam.	33½ in.	33½ in.

Roller bearings will be fitted to all axleboxes, including coupled wheels, also coupling and connecting rods

The Pacific was previously believed to be of the 4-8-0 type. Eight 4-8-2's, tentatively class "H" and ten 4-6-2's, tentatively class "M," are on order from Vulcan Foundry (Leeds) Ltd., and Robert Stephenson-Hawthorns Ltd., respectively. They may well be the last classes of steam locomotives to be ordered for the T.G.R.

Principal specifications, except roadworthy weights, for the two classes are as under:—

of both classes. Our thanks go to the Secretary and the Chief Engineer T.G.R. for the above information.



Record winter floods in the Hunter Valley, N.S.W., trapped several trains at Maitland. At the height of the flood, water rose to cab roof level on this 32 class 4-6-0 of the N.S.W. Railways. (Reproduced from the "War Cry").

NEWS IN BRIEF.

N.S.W.R. converted fifty more 55-class locomotives to oil-burning—making 70 in all—as an emergency measure during the coal strike. Conversions were made in record time of three weeks at eight railway shops at a cost of £2,000 per engine. Original 20 conversions have steam heating

V.R. Locos. Renumbered

Since 1886, when the present alphabetical classification system was first used, the Victorian Railways have indulged in more locomotive renumbering — with less effectiveness — than any other Australian system. The last series of renumberings commenced in 1929 are **still** incomplete.

In order to make blocks of numbers available for new groups of locomotives now on order, and future orders of standard types, a new series of renumberings and consolidation of numbers of existing classes has been approved to take effect from July. Only major alterations will be Y-class (allotted Nos. 100-132), N-class allotted Nos. 400-429 (new engines on order will follow on from 430); E-class and D1-class (consolidations); D2-class (allotted Nos. 550-599) to leave block 700-799 inc. vacant for new R-class 4-6-4's. New diesel-electric shunting locomotives (designated class F) are to be allotted Nos. 310-359 inc. Initially only ten are on order.

Existing B + B electric locomotives of 1100 and 1102 types are to be designated as class L, as will new C + C electrics to be purchased for main line operation. These latter are allotted Nos. 1120 upwards. By the time all N-class numbers have been allotted, remaining D1 and D2 classes will have been withdrawn for scrapping, allowing for expansion. Similarly, as A2-class engines are withdrawn, R-class numbers can expand beyond 799.

Most curious feature of the new allocations is that some D1 and D2-class engines will be renumbered for the **sixth** time since 1923. Almost all V.R. locomotive numbering complications have resulted from attempting to keep steam locomotive numbers contained below 1000, without leaving sufficient room for proper numerical grouping, which is still the case with the newest scheme.

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coils in fuel tanks to burn Bunker C oil, but rest burn lighter and more costly distillate. Thirty 7,000 gallon water tank cars were converted for use as oil tanks and eight 12,000 gallon tanks were transported to country depots for storage purposes. Oil burners now operate to Albury, Parkes, Dubbo, Armidale, Narrabri West and Casino. Orders for 20,000 tons of rails have been placed with two French steelworks to cost £1,250,000 (V.R. has 10,000 tons on order from Britain, as has Q.G.R.). Tenders have been invited for 1,600 bogie coal hopper cars of 36-ton capacity.

V.R. has let contracts for 500 GY type 22-ton open cars to two N.S.W. firms — A. E. Goodwin Ltd. and Commonwealth Engineering, who will each build 250. An additional 500 have been ordered through Knox Schlapp Pty. Ltd. from two British manufacturers — Metropolitan-Cammell Co. and Birmingham Carriage & Wagon Co. — for assembly in Victoria. The V.R. Newport shops will build 39 more GY and 461 more HY Cars; the latter to be followed by a repeat order for 500 HY cars.

In one week during the coal strike stunting and freight locomotives burned 7,000 tons of firewood and ran 32,000 miles in Victoria. The Department is acquiring building blocks in the vicinity of Newport for erection of prefabricated houses which British migrant workers are bringing with them. To meet rising costs, freights and fares have been increased since September 1. The Government is believed to have approved placement of orders for the initial seventeen electric road locomotives required for the Gippsland line electrification. A V.R. mission, comprising the Chief Electrical Engineer (Mr. H. P. Colwell), Assistant Chief Mechanical Engineer (Mr. E. H. Brownbill), Chief Train Controller (Mr. H. A. Zeis) and Mr. A. Gilmore, representing the Secretariat, has left for South Africa to study main line electrification and traffic working.

Q.G.R. now has three new DD-17 class engines in suburban service. No. 949 is standard black, with polished brass boiler bands and dome cover with red head stocks. No. 950 (exhibited at the Q.I.F.) is dark blue with a chocolate edged running board and polished brasswork. No. 951 is similar with a vermilion edged running board. The latter is stated to be the standard colour for future DD-17's. Twenty additional B-18 ¼ class Pacifics have been ordered from Walkers, Ld., Maryborough. Vulcan Foundry-built Pacifics will be painted hawthorn green according to the "Queensland Times," which added that all future designs will have individual colour schemes. Six three-car diesel trains have been ordered from Commonwealth Engineering Co. at a cost estimated at £468,000.

T.G.R. diesel-electric locomotives—32 units of B + B type on order from English Electric Co.—will be designated class X. Diesel-mechanical Vulcan-Dewery shunting locomotives were employed on suburban trains during the coal strike. G-class No. 6, damaged in a collision at Longford in April, 1945, is being repaired. A.S.G's. are now the second most numerous class in service. G-11 and G-25 have been delivered ex Queensland, but are not yet in service. When all diesel-electrics and new steam locomotives have been delivered (within three years) T.G.R. will have the highest percentage of modern motive power of any railway in the Commonwealth. Intending visitors to the Apple Isle, who wish to see veteran steam A, B, C and D-class engines still running should plan an early visit. At a cost of £100,000 a new diesel locomotive and railcar repair shop is being established at Launceston shops.

S.A.R. is pushing on with work aimed at conversion of the narrow gauge South-Eastern division to broad gauge. Through trains may be working to Narracoorte before the end of 1949, but complete conversion to Mount Gambier and the Millicent branch is expected to take several more years. Oil-coal fired engines seem to have solved S.A.R. fuel shortage problems, although at considerable cost as compared to normal coal burning. Islington shops are pushing the completion of the first lightweight steel air-conditioned roomette type sleeping cars for the "Overland" Adelaide-Melbourne service. Cars will be jointly owned by V. & S.A. railways. Islington is also building fifteen two-car diesel-electric railcar units

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

One result of the recent nation-wide coal strike was an increase in the number of locomotives converted to burn oil fuel. This photo by reader H. J. Wright, of Ashfield, N.S.W., shows N.S.W.R. 55 class 2-8-C "standard" goods engine No. 5618 with an Up stock train at Clyde on 9th July. Note the unusual Southern valve gear fitted to all locos of this class.

designed for multiple unit operation at up to 70 m.p.h. maximum speed.

Commonwealth Railways have converted two KA-class 2-8-0's to oil-burners and two C-class 4-6-0's Nos. 65 and 67 are similarly equipped. Decision to convert other locomotives, including NM-class 4-8-0's on Centralian line to S.A.R. pattern coal-oil operation is being expedited to enable Leigh Creek coal output to reach Adelaide market. Surveys for the new standard gauge direct line from Telford, railhead for Leigh Creek coalfield, to Port Augusta are almost completed. S.A. Government is urging the Commonwealth to give this line high priority to enable coal transport to new regional power station now being built at Port Augusta. Commonwealth Government is urging New South Wales Government to purchase the privately-owned Silverton Tramway Co. line from Broken Hill to Cockburn as a preliminary to standardisation of the direct transcontinental route from Sydney to Port Pirie. In a test a KA-class hauled a 1,300-ton freight train on the Trans line.

W.A.G.R. has more than twenty oil-burning locomotives in operation, including 14 U-class, 5 ASG class, 3 FS-class, and a number of PR-class.

Engine Pictures

A mixed bag of locomotives is found in our Engine Picture section this month. Heading the list is South Australian Railways 2-8-4 No. 720, class leader of the 720B class (official photo). In contrast are two diminutive engines of the 2 ft. 6 in. gauge, Buderim Tramway, Queensland. At left is a Krauss, at right a Shay (owner of photo unknown). To complete the set is a streamlined 4-8-2 J class loco of the 3 ft. 6 in. gauge, New Zealand Railways. North British built this machine and took this photo. (Above blocks kindly lent by "Truck & Bus Transportation".)

LATEST ON VIC. LOCO TESTS OF BROWN COAL

H-class 4-8-4 No. 220, after having completed a series of dynamometer tests on the western line to Ararat, was withdrawn from traffic for modification of the front end, etc., at Newport shops during June. It was temporarily requisitioned for working the Spirit of Progress, but has since been returned to the shops and had the sanding arrangements modified (see February issue for details.—Ed.), and a Cyclone front end arrangement fitted. This was specially designed by the Locomotive Firebox Co., New York, and will be tested for suitability for burning brown coal briquettes. An alternative front end arrangement locally designed may subsequently be tested if necessary. (It is understood this latter front end arrangement was tested on N-class 2-8-2 No. 135 during 1940.—Ed.)

If results from the Cyclone front end prove the practicability of burning briquettes economically and safely, further tests may be undertaken by equipping X-class 2-8-2 No. 36 (non-booster) with a mechanical stoker with a view to incorporating this arrangement in the now almost completed R-class 4-6-4 design. If this is decided upon, the tender bunker space would need to be modified to accommodate sufficient fuel. No. 220 will run a series of comparative tests to Ararat burning brown coal, after standing tests to obtain boiler performance data have been completed at North Melbourne, probably about the end of July.

The first set of German pulverised fuel burning equipment has been installed on X-class No. 32 at Newport. The second set is expected to be applied to an N-class engine later this year. Two special 4-wheel pulverised fuel transport cars, designated class KC, and carrying special hoppers, were constructed at Newport for transporting the powder-fine brown coal dust to locomotive fuelling points.

STOP PRESS: Reports from Tasmania indicate that the T.G.R. has been experimenting with special equipment to determine flange pressure and similar forces. Tests have been conducted with a Q 4-8-2 and a G 4-8-2 + 2-8-4 Garratt locomotive. G-37 is reported to have been tested with one of the leading pairs of coupled wheels replaced by free flanged wheels, making the unorthodox temporary wheel arrangement of 4-6-2-2-6-2-4. Q-5 recently emerged from the shops with the leading pair of flangeless drivers replaced by a flanged set of smaller diameter with extra counterbalance to make up for the loss of weight of the coupling rod segments. This gave the extraordinary wheel arrangement of 4-2-6-2. No further information is available as to the purpose of the trials, which are believed to have originated following derailments of leading flangeless wheels of A.S.G. locomotives.

ELECTRIC TRACTION

"TRAM TRACKS" Ceases Publication

For some time past, we have indicated that "Tram Tracks" could not continue without some radical increase in revenue. Since that time, and with dramatic suddenness, it has become impossible to continue in any separate form. Nobody could regret this more than ourselves—much time, thought, and money has been lavished on the "funny little magazine."

The new arrangements are not without merit, however, and, although tramway and electric railway material is somewhat curtailed in this issue, we hope to expand in the near future; the only item definitely omitted is the more aggresive type of propaganda.

"TRAM TRACKS" SUBSCRIPTIONS HONOURED

Subscribers to "Tram Tracks" whose subscriptions are not in arrears will receive copies of the combined magazine for the duration of their current subscription.

Subscribers who are in arrears will receive this concession if their renewal subscriptions are posted **before 15th September** (overseas 15th November).

will receive one copy of the combined

Direct subscribers to both magazines will receive one copy of the combined magazine (unless they already have additional subscriptions) unless we are advised to continue both subs.

Subscribers who review "Railways in Australia" through A.R.L.H.S. should advise us if they wish to discontinue their "Tram Tracks" sub. No refunds will be made as the contents of both magazines are still being supplied.

Concession rates for A.E.T.A. members have yet to be decided, and a further announcement will be made.

MORE FOR LESSS!

For the information of those who are surprised at the new arrangements, it is more economical to print additional copies of the enlarged "Railways in Australia" than to continue "Tram Tracks" as a separate Publication.

OVERSEAS DEVELOPMENTS

From behind the "Iron Curtain" we hear that complete new tramway services have been installed in Irkutsk, Kasan, Kolomea and Samarkand. The Moscow system of 56 routes now carries 3 million passengers daily. New construction in the U.S.A. include another 100 P.C.C's. for St. Louis to allow for scrapping of older cars, also 8 new M-U 58 passenger P.C.C's. for the Illinios Terminal's interburan routes. Four new modern cars have been added to the fleet in Ottawa, Canada. Work has commenced on the modernisation of the Nijmegen system in Holland. Many old cars have been improved internally, and have had modern streamlined ends placed on them.

AUSTRALIAN TRAMWAY NEWS

Edited by L. Marshall-Wood

News Items may be sent to 111, Esplanade, Elwood, S.3, Vic.

MELBOURNE — VICTORIA

The M. & M.T.B. have acceded to the Government request to raise fares as from September 1st, to bring them into closer accord with the raised railway rates, and to prevent overcrowding. This is the first major rise for 30 years. The 2d. first section will remain, but higher fares will increase by 1d. The Footscray 2½d. tickets will rise to 3d. Scholars' Concession Tickets will go up 25% and the 1½d. City Section tickets will be withdrawn. Revenue is expected to rise by £400,000 per annum.

The first tram to incorporate P.C.C. Trucks and electrical equipment will be running by the end of the year. It will differ from standard practice by having a straight-sill floor, with recessed steps at the two centre entrances. Improved ends and

Melbourne & Metropolitan Tramways Board

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windows will be fitted. Several new SW6 cars are under construction at Preston shops. 943-947 are nearly ready for running, whilst the bodies ofca rs cars up to 956 are in various stages. "T" class 182 is having its driving cabin doors altered to standard arrangement.

Tram stops along an undisclosed route will be consequetively numbered when labour is available. The Board has been asked for a report to indicate the practicability of operating buses on some tram routes at peak periods. Suspended week-end services were restored on 13/8/49, when more power became available.

It is understood that the first section of the Latrobe Street diversion will be opened from Eastern Hill Junction to the corner of Latrobe and Spencer Streets. The final link down Spencer Street will follow later.

MELBOURNE — V.R. TRAMWAYS.

Fare increases will take place from September 1st, in co-relation with other V.R. services. The scale has not yet been announced, but will be much more than the last increase. Suspended week-end services have been resumed. The latest financial results available (1948) show a loss on the Brighton route of £3,306 and a profit on the Black Rock service of £3,219.

BENDIGA — VICTORIA

It is expected that fares will be increased on this and the other two S.E.C. country tramway services in September. An increase was recommended by the Commission in August, 1948, but was not permitted.

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The report of Mr. H. H. Bell, Jnr., on the city's tramway system has been presented to the Minister for Transport. Contrary to his Geelong findings, where he suggested bustitution, for Bendigo he recommends the "most modern and efficient55 form of street transport — namely, trolleybuses. The cost of conversion will be about £175,000 against £400,000 for tramway rehabilitation. Alco recommended are the opperation of the trolleybuses by the S.E.C., the control and operation of all other street transit by the Bendigo City Council, the raising of fares to reduce the annual deficit by 40% and finally, the extension of the powers of the M. & M.T.B. urban area.

BALLARAT — VICTORIA

A preliminary investigation of the tramways by Mr. H. H. Bells, Jnr., for the government began on 9/8/49, when a conference was held with the Council. As with Bendigo, opposition to tramway abandonment runs very high in the city.

SYDNEY — N.S.W.

Suspended and reduced services have been restored following the easing of power restrictions. The second PR/I conversion No. 1562 is now on the road, and it is expected that Nos. 1517 and 1573, being altered at Randwick Shops will be in service shortly. The bustitution of the short isolated Rockdale to Brighton-le-sands route, which has been delayed, should be effected during August or September. Plans for the planned King Street (city) closure have, so far, not materialised in practice.

LAUNCESTON — TASMANIA

Many indignant citizens attended a protest meeing on the recent fare rise. In reply, municipal representatives stated that although passengers carried dropped 5% since the rise, revenue has risen by 21%. A protest has, nevertheless, been sent to the Government. Referring to the proposed trolleybus conversion,, it was stated that the total cost of vehicles plus road renewal has gone up nearly double the original estimate.

ADELAIDE — SOUTH AUSTRALIA

The M.T.T. are now equipping all trams with hand-shaped traffic signals to indicate direction of turn. They will be operated by an air valve near the controller. These are the first Australian trams to be so fitted.

PERTH — WESTERN AUSTRALIA

Among improvements effected to rolling stock during 1948-49 are the provision of the unique "pram hooks" on more vehicles, the alteration to the entrances of the bogie cars to provide easier access, and the fitting of sidelights to indicate direction of motion at night.

Random Reflections

By A Special Correspondent (Without Prejudice to "Tram Tracks")

While I have never, although I use my car every day of the week, been able to see why motorists living in Brunswick or Brighton, Collingwood or Caulfield, should expect Melbourne City Council to provide parking areas for them when they visit the city, the idea that the Council, the big stores and the Tramways Board, might co-operate on the lines of the New Orleans plan is worth consideration by all three — always provided that they do not, over the next couple of decades, in a "pass the buck" competition. Congestion in the American city became so acute that the big stores began to lose custom to their suburban rivals. So the merchants went into a huddle, and emerged with a fine plan which is working well. It is really a version of that which was proposed by Tramway Board Chairman Bell two years ago. The Council was induced to set up a large parking area on the outskirts of the city, while New Orleans Public Service, Inc., agreed to provide a bus service to and from the shopping area. The fare was reduced from 10 cents. to 7, but the 7 cent. token could be purchased only when taking out a parking ticket or when purchasing goods.

I have often speculated as to why it is that Bradford, the first to run trolleybuses in England the best part of 40 years ago, has never since regarded these vehicles with but tepid affection. It is quite a time since the latest installation, and it now looks as if the trolleys had gone completely out of favour. for the Queensbury tram route, which is the highest in Britain, climbing 817 feet from the Town Hall Square in four miles, has been marked for conversion to Diesel buses. With London resolved to abandon trolleybuses and with Wolverhampton, which once had the distinction of being an all-trolleybus city, deciding that all future ex-

Auckland Tramways Board No. 5, the first of a fleet of new trolley buses, was snapped by reader G. C. Stewart whilst undergoing trials. Note the single pole raised, using tramway overhead (negative return is obtained by using a "snake" running in the rail grooves). These vehicles will shortly take over on the Herne Bay tram route. (Block by courtesy of the Automobile Association, Auckland, Inc.)

Ken Winney took this fine view of D.R.T. & T. No. 1582, the first PR1 class car (converted from P class—closed toast-rack design) at Circular Quay, Sydney, N.S.W.

We are indebted to the Outdoor Advertising Association of Australia Inc. for the interesting view of a standard 1st-class "Tait" type suburban electric trailer car of the Victorian Railways.

HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

MORE ELECTRIC LOCOS.
V.R. Call Tenders.

Tenders have been called by the Victorian Railways for, alternatively, 17 or 25 main-line electric locomotives of the Co-Co type, having a maximum axle loading of 16 tons. They will be fitted with two pantographs and must be capable of hauling a 275-ton passenger train at a maximum speed of 70 m.p.h., or a 1,100-ton freight train at 30 m.p.h., up a gradient of 1 in 110. Considerable latitude appears to have been allowed as regards details. Tenders close on 30th November.

N.S.W. LOCO CANCELLED?

Reports, so far unconfirmed, state that, consequent on the calling of tenders for numbers of electric locomotives, the experimental machine being constructed by the New South Wales Railways will not be proceeded with.

THE EAST HILLS LINE
New South Wales Railways
By C. C. Singleton
(Concluded)

At the outset, automatic colour light signals were provided on the double line as far as Kingsgrove, and this has just been extended with the duplication to Herne Bay. The single line from Kingsgrove to East Hills was worked under miniature electric staff regulations, in two sections divided at Herne Bay, where the station was arranged with Down and Up working with catch points at the departure ends of both lines. These points at Herne Bay, and the Down junction crossover at Kingsgrove, had to be unlocked by the staff key being inserted in the lever in the signal-box before the road could be set. This cumbersome arrangement was most unsuitable for the fast electric service which followed later, in 1939.

The two changes necessary for through passengers by the original service at Tempe and Kingsgrove were very unpopular, and, in 1937, trains were run direct as between St. James and Kingsgrove.

The district continued to advance and passengers increased beyond the capacity of the Rail Motors to handle, a steam train having to be run from Central to East Hills in the evening peak. On December 17, 1939, the electrification was extended through to East Hills, and through running of electric trains between St. James and East Hills commenced.

On August 24, 1940, Dumbleton received its present name of Beverly Hills.

As before mentioned, the line was duplicated between Kingsgrove and Herne Bay, and additions to track and signal facilities were effected as under: Kingsgrove was altered by the reversal of the western crossover and elimination of the car storage siding. Signalling was re-arranged to permit of the turning back of trains for St. James at either end of the platform. Herne Bay now became the end of the double line and the crossover at the Sydney end was reversed. In addition to provision being made to turn back trains to St. James, the signalling also permits trains being reversed back to East Hills, as the new time-table provides for a two-car set being worked as a shuttle between Herne Bay and East Hills during peak hours—passengers for beyond Herne Bay having to change trains at that station. This seemingly retrograde step was brought about by the acute shortage of electric cars, as by this arrangement additional eight-car trips were enabled to be run between St. James and Herne Bay or Kingsgrove, where the patronage was sadly in need of some relief.

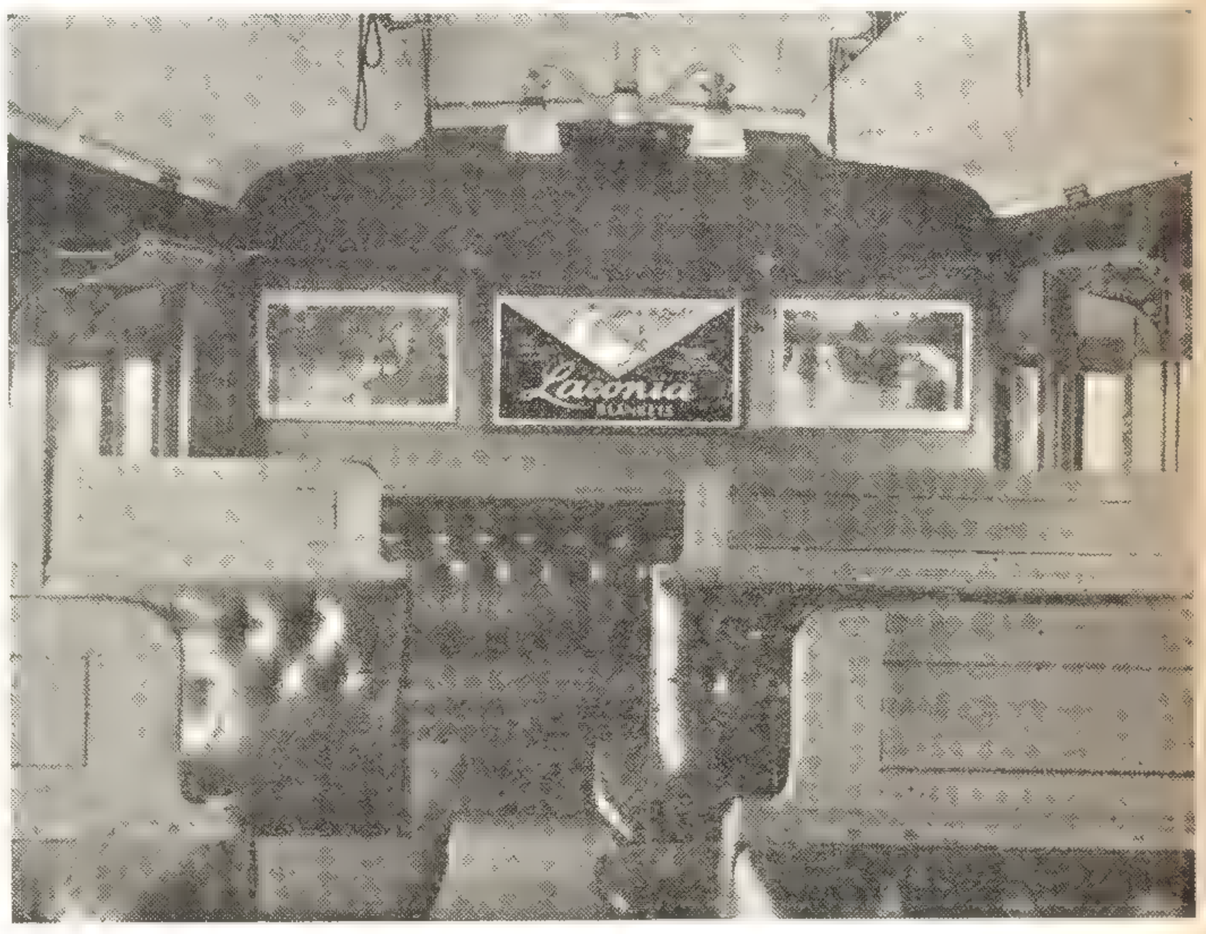
Coincident with the duplication between Kingsgrove and Herne Bay, the remaining single line section, Herne Bay and East Hills, was converted from electric staff to single line track block working, thus saving the time of transference of the staff at Herne Bay.

At East Hills crossing of trains was made possible by the provision of No. 2 Platform Road on the Down side of the already completed platform wall. The signals for this new track were made power upper quadrant type, and can be made to be operated automatically when no officer is on duty. The signals for the No. 1 Platform Road are mechanically operated, as are the points, while it is also connected to an emergency Run-round Road.

It is anticipated that this railway will shortly be as heavily taxed as its near neighbour, the Bankstown line.

FOR YOUR TRAMWAY NOTEBOOK
Tramway Route Numbers
Melb. & Metropolitan Tramways Board

1. East Coburg-City-South Melb. & St. Kilda Beach.
2. East Brunswick-City-South Melb. & St. Kilda Beach.
2A. City-South Melbourne & St. Kilda Beach.
4. City-Carnegie.
4A. City-Glenhuntly Railway Stn.
4B. City-Glenhuntly Depot.
4D. City-Darling Road.
4E. City-Elsternwick.
5. City-East Malvern.
5A. City-Wattletree Road Corner.
5B. City-Orrong Road.
6. City-Glen Iris.
6A. City-Tooronga Road.
6B. City-Malvern Town Hall.
7. City-Camberwell.
7A. City-Gardiner or Camberwell Junction and other short workings of Route 7.
7B. City-Glenferrie Road.
8. City-Toorak.
8A. City-Orrong Road, Toorak.
8B. City-Chapel Street & Toorak Road.
9. East Preston-City-South Melbourne Beach.
9A. East Preston-City.
9B. Thornbury - City-South Melbourne Beach.



9D. Thornbury-City.
9E. North Fitzroy-City.
10. West Preston-City-South Melbourne Beach.
11. West Preston-City.
12. City-South Melbourne Beach.
14. City-Caulfield.
15. Moreland-City-St. Kilda Beach.
16. City-St. Kilda Beach.
17. East Brunswick-City-St. Kilda Beach.
18. City-Brunswick or Brunswick Depot.
19. City-North Coburg.
20. City-Coburg.
21. City-East Coburg.
22. City-East Brunswick.
27. City-Hawthorn.
28. City-Richmond.
40. City-East Kew.
41. City-Kew.
42. City-Mont Albert.
44. City-Balwyn.
45. City-Deepdene.
46. City-Kew Post Office.
47. City-Kew Depot.
48. City-North Balwyn.
50. City-North Melbourne.
51. City-Essendon.
52. City-Essendon, Bulla Road.
54. City-Maribyrnong River.
55. West Coburg-City-St. Kilda Beach.
56. West Coburg-City.
57. City-West Maribyrnong.
58. City-Show Grounds.
59. City-Essendon Aerodrome.
60. City-Ascot Vale.
61. City-South Caulfield Junction.
62. City-South Caulfield.
64. City-East Brighton.
65. Darling Road-St. Kilda Beach.
66. Darling Road-Point Ormond.
67. Caulfield-St. Kilda Beach.
68. Kew, Cotham Road-St. Kilda Beach via Dandenong Road.
69. Kew, Cotham Road-St. Kilda Beach via Balaclava Road.
70. City-Wattle Park.
71. City-Wattle Park (Warrigal Road).
72. City-Riversdale.
74. City-Burwood.
75. City-Bowen Street or Hartwell.
76. City-Camberwell Junction or Camberwell Depot.
77. City-Prahran.
78. North Richmond-Prahran.
79. North Richmond-St. Kilda Beach.
80. City-Burnley.

Un-numbered streets include:—Lygon Street-St. Georges Road, Moonee Ponds-West Maribyrnong, Elsternwick-Point Ormond, Footscray Railway Station-Williamstown Road. Footscray Railway Station-Russell Street, Footscray Railway Station-Ballarat Road, as well as various City shuttle services, peak-hour, and week-end short workings on many lines, and the services to munition works, etc.

tensions to the city must be by Diesel buses, it appears as if Newcastle is to be the main British home of that type of rolling stock. My reflection is that not more than 20 per cent. of the £8,000,000 wasted by London on this abortive trolleybus experiment would have given the people of the Capital a tramway system which could have reached the level of comfort and efficiency achieved by the trams of Leeds, Glasgow, Blackpool and Edinburgh.

In its customary laborious fashion "The Sun" made a pathetic attempt to be funny over the fact that the son of the Chairman of the Melbourne (Tramways Board had recommended trolleybuses for Bendigo. Probably, the writer is incapable of seeing the difference in a system which deals with 2,372,000 passengers a year and one which handles that number of any three days you are to select. Or, for that matter, no difference between a system which caters for 18,000 people and one which provides transport for 916,000. Bendigo's traffic receipts last year were £33,000; Melbourne's, £4,031,000. Bendigo, in short, is not a tramway town; in fact, I do not believe there is sufficient traffic to justify a trolleybus installation.

A.E.T.A. NOTES

MELBOURNE BRANCH
August Meeting

Despite the speaker's warning that he knew trams "only as a means of getting about" Mr. J. L. Buckland's address on "Some Aspects of Melbourne Transport" proved one of the most interesting ever given to our members. Pointing out the restrictions placed on street transport by lack of bridges, and the impossibility of developing the existing railway termini, Mr. Buckland outlined possible means of overcoming this. Interesting proposals were the creation of an entirely new Central Station on the Exhibition site, and the elimination of the Flinders Street viaduct. Details of these radical suggestions were surprisingly uncomplicated. It is hoped that Mr. Buckland may arouse public interest in his proposals.

SYDNEY BRANCH

Severe restrictions caused by the national coal strike prevented the holding of beetings during July and August.

FORCEFUL PAMPHLET.

Sydney Branch recently issued for public distribution, a forceful pamphlet advocating the retention and modernisation of Sydney's tramways. The pamphlet was prepared by a group of members including Messrs. Miller and Chinn, who are to be congratulated on their work.

"HEADLIGHTS"
Reduced Rates.

We have been advised by the Electric Railroaders' Association that subscriptions to "Headlights" (see advt.) will be made available to A.E.T.A. members only, at reduced rates. Any members wishing to subscribe may do so through this magazine for 12/9 per annum. Ordinary subscriptions cost 16/-.

THE WAITING ROOM—
Letters to the Editor

RAIL MOTOR ACCIDENT

The Editor,
Railways in Australia.
Dear Sir,

While I cannot at this juncture tell you what Rail Motor was concerned in the derailment at the C.O.R. Platform on the Geelong line, I can definitely say that it was not one of the McKeen Cars.

The accident happened on the night of 9th January, 1929, on the UP journey.—Yours etc.,

C. D. GAVAN DUFFY.

Camperdown, Vic.

TRAIN TIMING

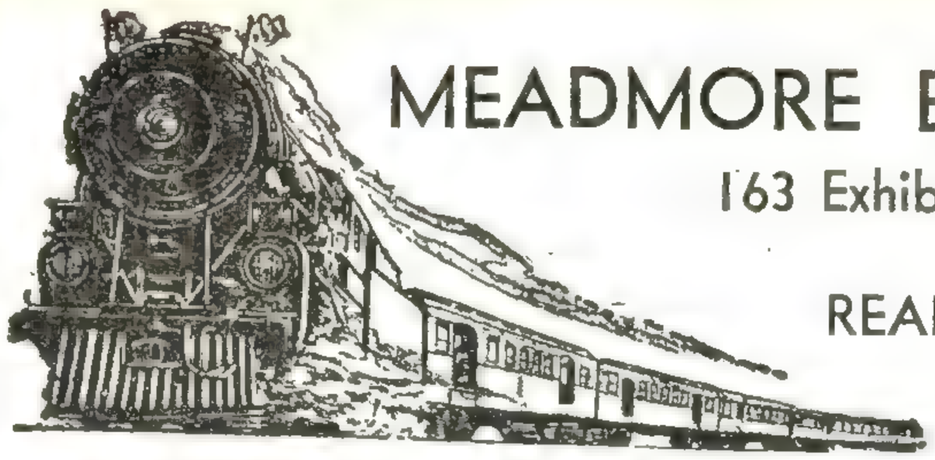
The Editor,
Railways in Australia.
Dear Sir,

It has become very apparent that the ranks of railway enthusiasts in Australia are being increased daily; this is being achieved in many ways, amongst which is your publication. It has done much to arouse new interest in railways, and I feel sure that many casual readers have become deeply nterested in the various branches and sections of this wide hobby. Your magazine, with its editorial policy and Mr. Buckland's news section, cater for people primarily interested in modern developments in railroading, while the Bulletin section, as well as covering modern news items, gives valuable information to those whose quest is historical matter. Whilst being keenly interested in the above-mentioned aspects, I am also deeply interested in another absorbing study —one that has been lightly dealt with in Australia, namely, Train Timing.

All enthusiasts who read English railway publications, especially the "Railway Magazine," will be well aware of the amount of publicity given to train timing records and how this field is very wide indeed. Mr. O. S. Nock, Mr. H. R. Wright and Mr. Cecil Allen, and many others, have spent considerable time in the study of train timing. Especially will Mr. Allen be remembered for the regular publication of "British Locomotive Practice and Performance" in the "Railway Magazine." All famous locomotive classes in Britain have, at some time or another, been "reported" in these articles, and interest in this type of train recording is great. It is, indeed, stirring to read of No. 6234, "The Duchess of Abercorn," in a thrilling performance with the 610-ton test train, when her speed over the famous Beattock Summit never fell below 62 m.p.h., and the engine developed unheard- of drawbar and calculated horsepower, figures that have never been exceeded by any British engine.

I know at this stage many readers will be saying, "Oh, that's England, with its multitude of railway routes, its long, non-stop runs, its high-speed stretches of light grades; here in Australia, no! no!" In reply to such comment, I should like to state that we have in N.S.W. and in other States of Australia, great opportunities to record some very creditable locomotive performances. Naturally, adverse grades, such as exist on most of our main lines, do not make for 80 m.p.h., but when speeds on these grades are considered in relation to train weights and the general dimensions of the locomotives concerned, it will reveal very surprising results, which can easily be compared with similar performances overseas.

As an example of hill-climbing in N.S.W., I would like to quote 3626, a 4-6-0, designed and built over 23 years ago, hauling a load of over 200 tons, which reached a maximum speed of 49.9 m.p.hh. on the 1 in 75 rising grades south of Mittagong, N.S.W. This performance was re-



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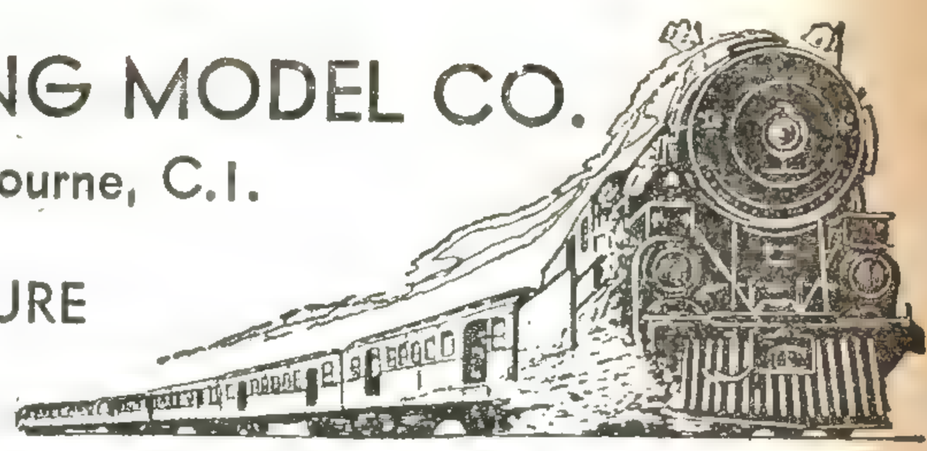

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corded by myself and companian on the "Federal City Express" and, because of this feat of hill-climbing, the driver was at one stage of his journey 15 minutes ahead of his schedule. Section after section he ran in less than the time allowed, and, throughout his handling of the engine over these sections, the scheduled time was improved on. This trip was in actual, non-test running, and without any special, hand-picked coal or crew, or the engine receiving any unusual mechanical attention prior to the run.

All any hobbyists require to record engine performance is a good position, preferably in the front car, a stop watch, an ordinary watch, time-table, and a rough idea of the gradients. Such footplate experiences as some correspondents write about are naturally denied most of us, but it is only a small portion of train-timing articles that are described from the cab. After a few holiday or week-end trips, during which you become acquainted with the road, the "timer" becomes keenly interested, and every change of speed is noted. every change in the locomotive's exhaust is apparent, and the coming signals are eagerly watched for; and, mostly, the man enthusiast becomes better at "back-seat driving" than any woman!

Apart from Mr. M. Park, who, in various articles on a particular locomotive class has given excellent accounts of train running. I have not read of any other enthusiast in this country who makes train timing a definite study. But I feel sure that there exists a group of chaps who make this form of interesting observation, and it is for their interest that I write this letter. Per medium of this column, I hope to hear from other enthusiasts who would like to exchange experiences and records. There may be just that many interested that occasionally, through the courtesy of the Editor of "Railways in Australia," an article on Australian Train Timing may be included.

Wishing the magazine all the success it deserves.—Yours etc.

J. L. HOGG.

Ashfield, N.S.W.

(Train-timers are hereby invited to open the regulator! We shall be happy to make space available, provided contributions are not unduly long-winded; and, if the demand warrants, we shall invite Mr. Hogg to edit a small monthly section on this fascinating hobby. There is at least one other train-timer—we have been co-opted to help him more than once!—Editor.)

AMERICAN TRAM FAN

The Editor,
Tram Tracks.
Dear Sir,

Being a juicefan I would be interested in obtaining your publication, and might be interested in buying pictures of Australian and New Zealand cars if they are close 2/3 or 3/4 views or full length—would like a price list.

During the war many R.A.F. men visited Montclair as guests of families; they were from Australia and New Zealand: no doubt you have many veterans in your organisation who

(Continued from page 1)

pension bearings on each axle. The motor nose suspension is of special design to allow for movement of the motors in the bogie frame. All motors are interchangeable and are air-cooled, air being supplied by a motor-driven fan mounted on the floor in the generator compartment. The air is forced through ducts running under the underframe to each motor. Each bogie is easily removable from the underframe or, if desired, one axle and motor only can be removed.

The 500-volt main generator is directly coupled to the engine and supplies the direct current to the four traction motors. Air for the engine is drawn into the generator compartment through filters fitted in the side doors. A fan mounted on the generator shaft draws this air through the generator and expels it into the engine room on the other side of the partition. This ensures that all air received by the engine is clean, and the oily atmosphere of the engine is kept away from the generator and electrical equipment the majority of which is mounted in the generator compartment. Directly coupled to the main generator is an auxiliary generator or exciter. This is used to supply the power for the control circuits, air compressors, traction-motor blower, lighting and battery charging.

(To be continued)

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

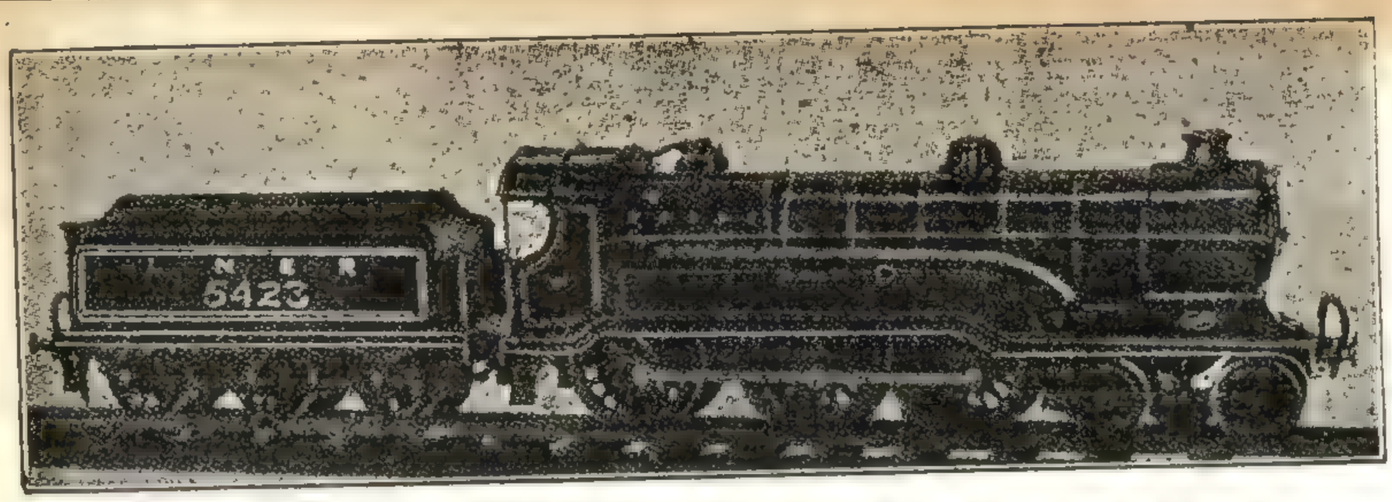
SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.



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visited New Jersey. From people who have visited your country I have heard well of your transportation facilities and that the buses don't seem to hurt the trolleys at all. It isn't that way in New Jersey. I'm afraid trolleys will soon be history. Do many lines operate open bench cars and double deck cars?—Yours etc.,

HOWARD E. McCONNELL.
Montclair, N.J., U.S.A.

(While we have not a full range of the pics. you want, some of our readers will probably write. We do have some trouble here with buses—more with people who know nothing about transport! Last double deckers in Hobart—only Australian city to operate them regularly—went early this year. Sydney operates hundreds of cross-bench cars, many of them partly open. About half have fully-enclosed compartments. Brisbane operates some open-bench cars in peak hours.—Editor.)

PERSONAL

N.S.W.R. CIVIL ENGINEER HONOURED

The Institute of Civil Engineers (London) has awarded the Baker Gold Medal for 1949 to Major-General A. C. Fewtrell, Chief Civil Engineer, N.S.W.R., for his work in connection with the design and construction of the new Hawkesbury River Railway Bridge. (The Baker medal is awarded every three years for outstanding civil engineering accomplishment.—Ed.).

NEW W.A. COMMISSIONERS

Messrs. P. C. Raynor and W. C. Clarke have been appointed members of the newly-appointed Railway Commission in Western Australia and will act with the new Chief Commissioner of Railways (Mr. A. G. Hall). Mr. Raynor has been in the W.A.G.R. service since 1911 and has recently been acting assistant commissioner. He was formerly personal assistant to the former Commissioner (Mr. J. A. Ellis, who retired recently) and secretary of the Department. Mr. Clarke, like Mr. Hall, is an Englishman with Indian railway experience. He was formerly assistant works managed of the G.I.P.R., and latterly C.M.E. of the system and the East Indian Railway. He is aged 44.

RAY BRUCE, Alphington, Vic.—Thanks for print—hope to use when finances permit. Thanks for good wishes.

H. J. WRIGHT, Ashfield, N.S.W.—Oil burner pic. of interest—hope to run an article on this important measure. As you suggest, oil burners doing well here. Ironically, they often haul coal trains! Your ad. will appear twice.

F. C. NICHOLS, Ryde, N.S.W.—Press cuttings most welcome. Have passed them on to our News Editor.

K. J. C. ROGERS, Albion, Qld.—Thanks for pictures—will use at least one.

P. HONEYMAN, Gympie, Qld.—Agree with your choice of AC16—hope to use. Thanks for sending these prints.

R. B. CLARK, Marrickville, N.S.W.—Thanks for tip—we were too late for the block, but have had a stereo made. Keeping prints for future use.

Question Box

Arrangements have been made for our Question Box to be handled by a well-known A.R.&L.H.S. member. Questions on any aspect of Australian railway operation may be forwarded; address envelope to "Question Box," c/o Traction Publications, 29 Seymour Gr., Brighton Beach, S.5, Vic. It is regretted that direct answers cannot be posted to correspondents.

Mr. A. B. HALEY, Tempe, N.S.W., asks the dates of rebuilding (a) the N.S.W.R. Z24 (ex B-55) class from a sloping front end to a vertical one, and the substitution of a Belpaire firebox for a round-top; the N.S.W.R. Z25 (ex B-205) class, if any.

ANSWER: (a) Z24 class locomotives were reboilered between 1903 and 1905; (b) Z25 class locomotives were reboilered and fitted with a larger smokebox between 1901 and 1904. Nos. 2531 and 2534 were fitted with superheater in 1923.

Railways in Australia

and

A.R.L.H.S. BULLETIN

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Published monthly by TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5. Victoria, in conjunction with the Australasian Railway and Locomotive Historical Society. and the Australian Electric Traction Association

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Volume Two, No. 10 — OCTOBER, 1949

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OUR COVER

West Australian Government Railways' "Westland" Express (3 ft. 6 in. gauge) headed east near Yellowdine on the long run from Perth to Kalgoorlie.
(Courtesy, W.A.G.R. Publicity Dept.)

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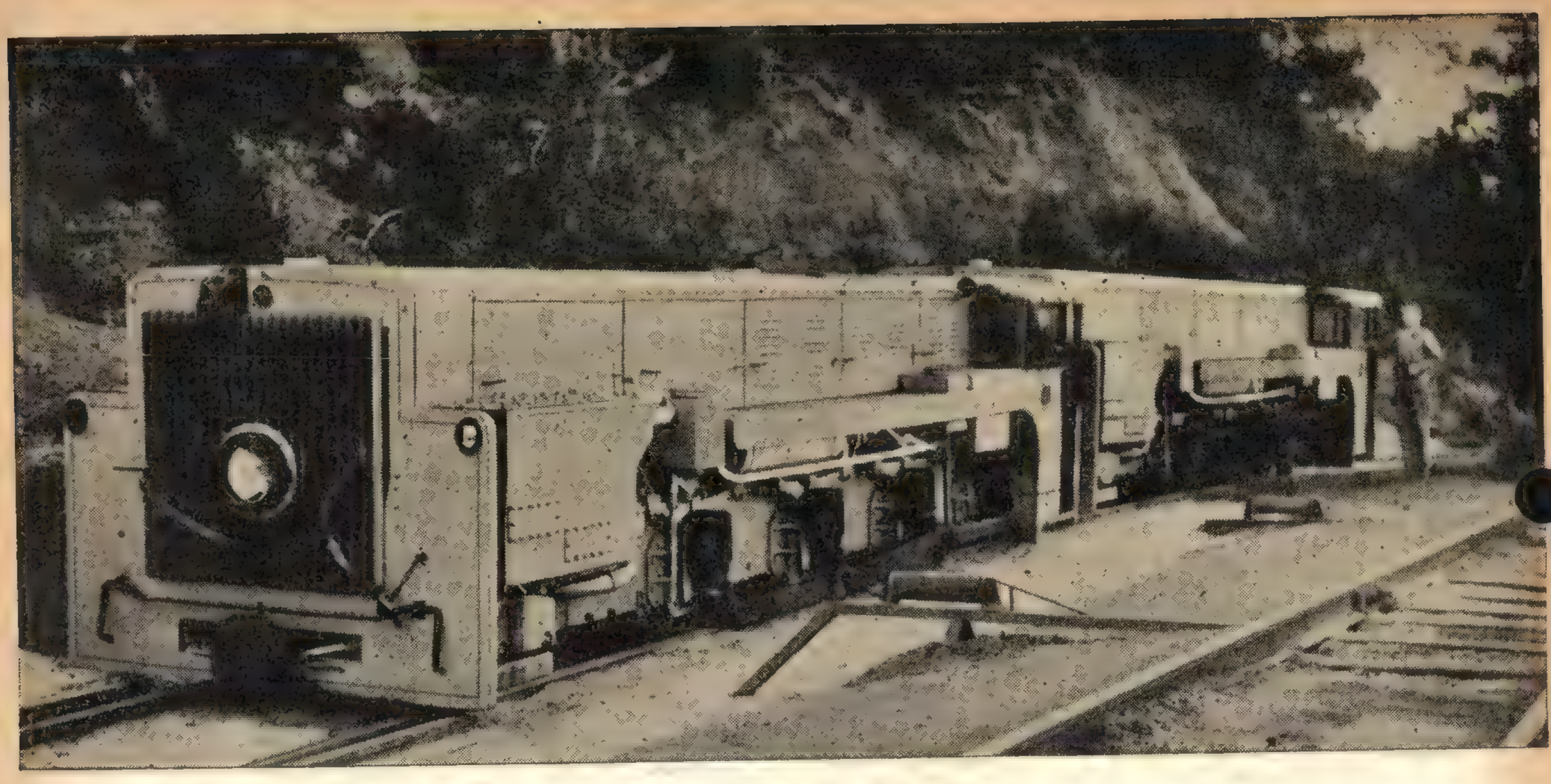

MODERN DIESEL LOCOMOTIVES For Mine Haulage

Increased coal production — vital to Australia's economy — requires the mechanisation of underground mines to the greatest possible extent. Of prime importance to any mechanisation scheme is the development of the main underground haulage ways to permit of rapid transport of coal to the surface. By courtesy of the manufacturers, Malcolm Moore Pty. Ltd., we give particulars of a new type of diesel locomotive for this work.

Although little is usually to be seen on the surface, large coal mines have extensive railway systems underground. One of the largest in Australia is that at the Bulli, N.S.W., colliery of Australian Iron & Steel Ltd. This mine is being completely mechanised, and the main haulage system will have a capacity comparable with that of a main-line surface railway, some 3,000 tons per 8-hour shift. Track gauge is 3 ft. 6 in., and 85 lb. rails are used.

Six 26-ton diesel locomotives have been built by Malcolm Moore Pty. Ltd., Port Melbourne. Two such locos working in multiple-unit will haul 35 10-ton skips. Pneumatic and electro-pneumatic controls are used.

Principal dimensions of these locos are: Length, 26 ft. 10 in.; width, 7 ft. 1 in.; height, 6 ft. 1 in. 65 gallons of oil and 80 gallons of water are carried.

An 8-cylinder Gardner 8L3 compression-ignition engine develops 204 b.h.p. at 1,200 r.p.m., with normal temperature and pressure. This power unit has cylinders 5¼ in. by 7¾ in., and is of the cold start, airless-injection type. To allow for altitude, accessory drives, and back pressure from the exhaust gas washing system, the engine has been de-rated to 184 h.p. Starting is by two 24-volt C.A.V. axial pattern starter motors, and there is a supplementary oil pump, for circulating oil through an oil-cooling section of the radiator. Oil bath air filters are fitted to the air-intake manifold.

A series of epicyclic gear trains with ratios of 4.07, 2.33, 1.55, and 1 to 1 provide the four speeds, with an overall ratio of 7.5 to 1 for the final drive. At 1200 r.p.m., road speeds (allowing 2½% slip through the fluid coupling) are 3.4, 5.92, 8.9, and 13.8 m.p.h. Assuming 75% overall efficiency, tractive efforts are 15,220 lb., 8,740 lb., 5,810 lb., and 3,750 lb., respectively.

Through a Vulcan-Sinclair hydraulic rigid traction coupling, the drive is taken by a cardan shaft (with Layrub rubber cushioned joints) to a Wilson-Drewry combined speed and reversing unit. Final drive from the reverse drive jackshaft to the axles is by the side coupling rods shown in the illustration.

To permit of satisfactory underground operation, exhaust gases are cooled and washed by water sprays, then passed through water chambers fitted with baffles, and mixed finally with air from an engine-driven blower, before discharge.

Seats for both a driver and a shunter are provided in the cabin. Dash panel instruments show braking system air pressures, engine speed, generator charging rate, engine lubricating oil pressure, engine cooling water temperature and running speed. Throttle and gear controls are fitted for ease of use in either direction. Electro-magnetic sanders are fitted also for use when running either forward or backward.

(Next month we describe the electro-pneumatic controls of these interesting locomotives.)

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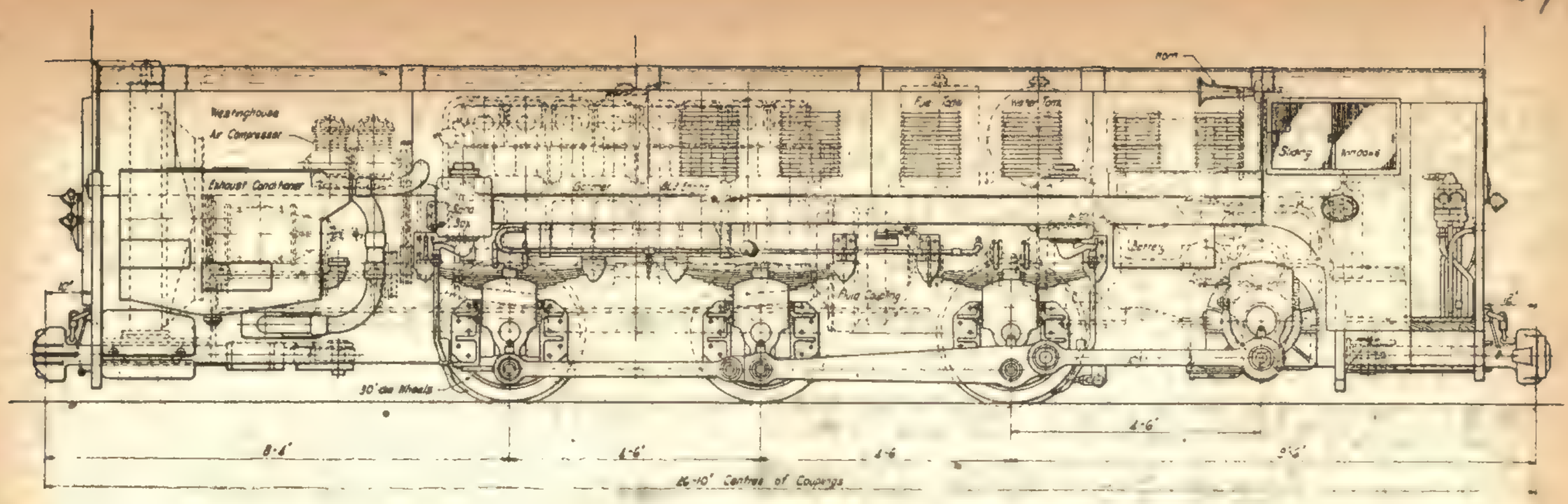

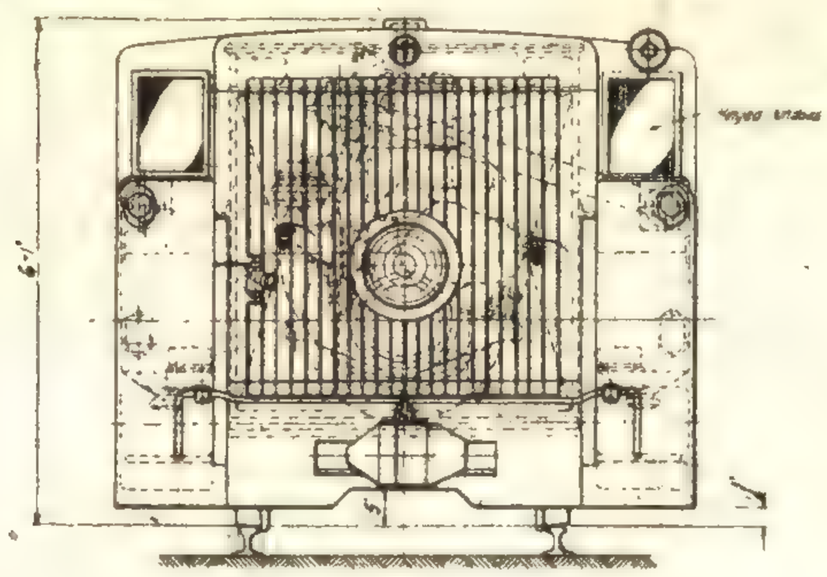

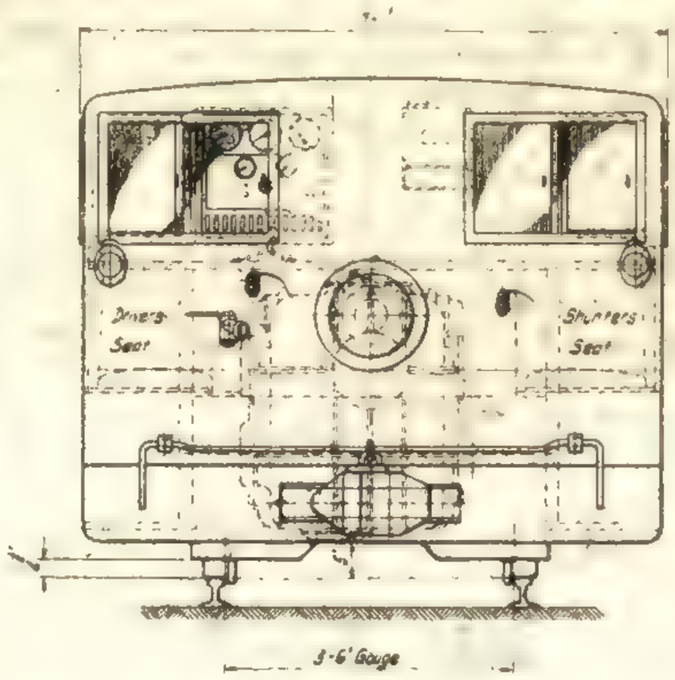

S.A.R. DIESEL-ELECTRICS (Concluded)

The diesel engine is started by motoring the main generator of the battery, a series field winding being incorporated in the main generator for this purpose. The batteries are housed in two containers mounted on the side platforms in front of the cab.

The locomotives have been fitted with Westinghouse E.T. air brake equipment and "dead man's" pedal. This equipment is designed so that the locomotives' brakes may be used with or independently from the train brakes. They may be applied with any desired pressure which is automatically maintained within the brake cylinders, regardless of leakage and variation in piston travel within the cylinders. This equipment makes the locomotives very suited to shunting operations, as increased piston travel due to brake-block wear has no effect on the locomotives' braking power. Each bogie is fitted with two brake cylinders applying brake blocks to all wheels. A hand brake has been connected to the rear bogie for use when stabling. Two motor-driven compressors provide an ample supply of air for the operation of the brakes and auxiliaries.

A dead man's pedal is fitted into the main control cubicle situated in the cab. The driver must maintain this pedal depressed whenever the control handle is in a driving position. Failure to keep this pedal depressed results in the power supply to the bogies being shut off and, after a small time lag, the brakes are automatically applied. The driver's brake valves are duplicated to allow operation of the locomotive from either side of the cab, two main control handles also being provided and coupled together for this purpose.

The cab is constructed from steel plates welded together and suitably stayed. Particular attention has been given to the position of windows so that the operator has ample lighting on the instrument panel and excellent visibility, irrespective of the position from which he is driving. A sanding valve is fitted to both sides of the cab, and supplies sand to the leading wheels for forward running, and the rear wheels when running in reverse. A comfortable swivel seat is provided on each side of the cab, from which all controls are within easy reach of the operator.

The output of the engine is controlled by the control handle which alters the diesel engine speed, power output from the generator, and locomotive speed. A mechanically operated lever on the control cubicle is provided with three positions: "Forward," "Off" and "Reverse." In addition, the cubicle carries a master switch operated by a movable key. The key can be removed only when all controls are off, and in this position, the control handles and reverser are locked to prevent interference. The control cubicle is fitted with the following instruments: main ammeter, battery ammeter, engine lubricating oil pressure and temperature gauges, engine water temperature gauge, speedometer, and engine tachometer.

A number of electrical protective devices ensures that power is cut off and protects the equipment should an generator be overloaded failure of electrical fault to earth occur, the the blower motor, and either the lubricating oil or air pressure fall below a safe minimum.

The diesel-electric locomotives can operate 24 hours a day and seven days a week, if necessary, with not more than one eight-hour shift off in a week for servicing and inspection. The fuel tanks carry 300 gallons, which is sufficient to enable the locomotive to operate continuously for five days without refuelling. This enables a considerable saving in time to be achieved. The ordinary steam locomotive requires some hours per day to water, refuel, and clean fires.

Diesel-electric locomotives will be welcomed by the operating crews and, when introduced to main line operation, could provide a solution to the coal troubles so frequently experienced in recent years.

(From the S.A. Railways Institute Magazine — forwarded by Mr. John Buckingham, Adelaide, S.A.).

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WHAT THE RAILWAYS ARE DOING

RAIL NEWS FROM ALL PARTS OF AUSTRALIA

Edited by John L. Buckland

Readers are invited to send contributions under this heading to Mr. J. L. Buckland, 118 Albert Road, South Melbourne, S.C.5, Victoria.

"BORONIA" SETS MODERN TREND
New W.A.G.R. Diesel

First of the six new three-car diesel-electric trains designed and constructed at the Midland Junction shops of the Western Australian Government Railways was given a trial run between Perth and Pinjarra on August 23. Known as the "Wild Flower" class, each train will bear the name of a Western Australian wildflower, namely: "Boronia," "Banksia," "Crowea," "Grevillea," "Hovea," and "Leschenaultia."

The new trains were planned as part of the regeneration and improvement programme initiated by the W.A.G.R. since the war, and each comprises a power and baggage car and two passenger trailer cars. The interior decoration of the latter includes natural colour reproductions of the six flower names selected.

The power and baggage cars are 64 ft. 9 in. length over buffer-couplers and 63 ft. over body. Bogie centres are spaced 43 ft. apart, and the roadworthy weight, when fully loaded is 50 tons, including five tons distributed in the baggage compartment. The bogies are 6-wheel compensated spring beam type, with laminated bolster springs and helical equalising beam springs. Pneumatically operated sandboxes are mounted on the bogie frames. Fully compensated clasp brakes with Westinghouse slack adjusters are fitted. The Vacuum brake system is used, operated by a Westinghouse combined brake and step valve, which is interlocked with the pneumatically operated retractable side steps at the passenger car entrances.

The power car body is of steel construction, lined with steel in the engine compartments, and with steel and masonite in the baggage compartment. Tropal blankets provide insulation against heat and noise throughout. The trains are powered by two English Electric 6H type compression ignition, 6-cylinder engines with 8 in. stroke by 6 in. bore, and developing 209 b.h.p. at 1,500 r.p.m. These are direct coupled to 132 KW direct current generators, which supply current to four 75 H.P. traction motors, axle hung type, which drive the outer axles of the 6-wheel power bogies through spur and reduction gears. The central axles of the power bogies are provided to distribute the weight, as the axle load is restricted to under ten tons to permit operation over light rails.

There is an engine compartment at each end with a central baggage room. The power cars have a control station at each end, the driving compartment having a master controller equipped with a "dead man's handle." Both power and trailer cars run on S.K.F. roller bearings. Fuel tank capacity of 380 gallons is sufficient to enable a return journey from Perth to Albany, 680 miles, to be made without refuelling. An auxiliary electric generator, coupled to the end of the main generator shaft, provides power for the control circuit, battery charging on both power and trailer cars, and all power car auxiliaries, except the radiator fan motor, which is supplied from the main generators.

The engine radiators are provided with separate elements for water and oil cooling, and hot water radiators are provided in the driving compartments, which are fitted with large wide-vision windows with screen wipers. Full-size headlights and electric horns are provided at each end, which is painted with broad diagonal black and yellow bands in an endeavour to improve visibility at level crossings.

The trailer cars are 63 ft. 9 in. long, over couplers and 61 ft. 6 in. over body. Clear inside width is 8 ft. $4\frac{7}{8}$ in. with maximum head room at centre of 7 ft. $4\frac{7}{8}$ in. Seats are provided for 64 passengers, and the roadworthy tare weight is 21 tons 17 cwt. Bodies are of steel construction on a girder type steel underframe. The interior is lined with masonite and insulated with tropal blankets. Cars are divided into two passenger saloons at either end of a central entrance vestibule. Each saloon

Now undergoing a series of brown coal tests (see news item this issue), Victorian Railways' 4-8-4 heavy express passenger locomotive No. 220 is rarely seen on passenger trains. The sole representative of the "H" class, "Heavy Harry" is here seen on an early passenger run in 1941, when John Buckland made this picture.

has 16 double seats in two rows, either side of a central aisle. The seats are high-backed, rubber-cushioned, and upholstered with brown leather. Each two pairs of seats face one another on either side of a large, wide-vision, half-lift spring-balanced window. Head and arm rests are fitted and all seats have reservation numbers.

Luggage racks run the length of each saloon, and in addition smaller items may be placed beneath the seats. Lighting is by cold-cathode fluorescent tubes, which run the full length beneath the luggage racks. Curved stainless steel reflectors distribute an even 10 ft.-candles to each seat, assuring ample light of satisfactory brightness for reading. Auxiliary incandescent lights are set in the ceiling. The cars are provided with end doors and covered gangway connections of the concertina type.

Satisfactory ventilation is assured by "Flettner" automatic S-vane wind motors on the roof, operating extractor fans set in the ceiling. These are operated solely by natural air pressure, and may be closed by hand-operated interior shutters. Iced drinking water is supplied to a chrome-plated font from a refrigerator unit beneath the car floor. Hot and cold water is provided in the toilet compartments; which have stainless steel basins, mirror, towel and brush racks, and an upholstered seat. The separate lavatory compartments are fitted with a porcelain pedestal with a foot-operated flusher. Both toilet and lavatory have waist high stainless steel dado, with upper walls and ceiling in white enamel. Floors are waterproofed and provided with drain holes. Underslung tanks carry 60 gallons of hot and 120 gallons of cold water, which is raised by electric pumps to overhead tanks for reticulation to the compartments.

All interior finish is in polished native woods and all metal fittings are chrome plated. Stainless steel ash trays are fitted beneath each window. The retractable steps are provided for use at ground loading stations, and are so interlocked with the brake system that they can only be operated when the train brakes are applied. A guard's compartment is fitted at one end with a doorway into the passenger saloon. Buzzer intercommunication between Guard and Driver is provided. The 4-wheel trailer car bogies have hydraulic shock absorbers to control side oscillation for the first time in W.A. Car interiors are finished in cream, and the exterior colours of green and cream give the new equipment a pleasing appearance.

"Boronia" is operating on the Perth-Albany run, replacing the "Governor" class diesel-electric car previously running. This will be transferred to the Eastern Goldfields District to provide a fast passenger service from Kalgoorlie to Leonora and Laverton and also on the Esperance line.

The second train, "Crowea," will enter the Perth-Wongan Hills-Mullewa-Geraldton service early in October, giving a fast daylight service. Connecting steam trains will run from Mullewa to Meekatharra and Wiluna, so that passengers to those distant terminals will spend only one night on the journey instead of the previous two.

The new Railways Commissioner (Mr. Hall) is very pleased with the new diesel-electrics and the Midland Junction designers and shopmen have every reason for pride in this latest production of their skill and ingenuity. In the words of the late Chief Mechanical Engineer (Mr. Mills): "If it's made at Midland, it's good!"

Tasmania Soon To Have LARGEST DIESEL FLEET

With a total of thirty-two diesel-electric dual service road locomotives on order, the first of which should be in operation next year, the Tasmanian Government Railways will have more diesel power in operation than any other Australian railway. Preliminary details of these Bo + Bo type locomotives have been released, and are published by courtesy of the Secretary for Railways.

The prime mover is an English Electric 600 b.h.p. six-cylinder four stroke unit with an exhaust gas-driven centrifugal supercharger. The main generator is direct coupled to the engine and supplies current to the four axle-hung traction motors which are geared to the axles. Maximum starting tractive effort is 31,000 lb. which can be exerted up to a speed of 4 m.p.h. The motors are geared for a maximum road speed of 55 m.p.h. Total roadworthy weight is estimated at 56 tons, equally distributed.

The locomotives are of the cab-at-end type, suitable for operation in either direction. The cab is totally enclosed, with side entrance doors and large wide-vision windows equipped with screen wipers. Headlights and marker lights are provided at each end, together with

INTERESTING BOOKS for RAILWAY ENTHUSIASTS

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"KING and CASTLES of the GREAT WESTERN RAILWAY" (5/-).
"A.B.C. OF BRITISH LOCOMOTIVES" (2/10 ea.)—No. 1 (Western Region), No. 3 (L.M.S.R. Region), No. 4 (L.N.E.R. Region), No. 2 (Southern Region). (These booklets give the new numbers of British Railways locomotives since Nationalisation.)

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N.S.W.R. STEAM HEATING EQUIPMENT

In response to requests from several readers we are publishing brief details of the steam heating equipment which was first installed in the "Southern Highlands Express," as an experiment during the winter of 1948 (see August issue) by the N.S.W.R. This was the first occasion on which this widely-used (overseas) system of train heating had been applied in Australia. The equipment has now passed all trials satisfactorily, and is to be extended to other suitable trains.

Locomotive equipment consists of a steam pressure reducing valve located in the cab and supplied from the auxiliary steam turret and controlled by a suitable stop valve. A safety valve, set to blow off at 50 p.s.i. pressure is connected to the low pressure side of the reducing valve, and is located outside the cab. A steam pressure gauge, indicating the train steam pipe pressure, is located on the fireman's side of the cab. A lagged steam pipe with flexible hose-pipes between engine and tender, and at the rear of the tender feeds steam from the reducing valve through the train. A steam trap and separator is situated at the lowest point of the tender steam pipe to drain off condensed water. An end valve at the rear of the tender is provided to shut off steam supply at this point when coupling to and uncoupling from trains. At the rear of the tender there is a dummy coupler to which the flexible steam pipe hose is attached when not in use to prevent damage. The steam reducing valve is adjustable by means of a hand wheel, but the normal operating (*i.e.*, train pipe) pressure is set at 45 p.s.i. to protect the low pressure steam line, whilst the safety valve is provided to guard against incorrect functioning of the reducing valve, which might result in damage to the train equipment.

Passenger car equipment consists of a 1½ in. dia. lagged steam train pipe with a continuous fall from each end towards the centre, where a steam trap and separator is located to remove condensation. End stop valves are provided at the ends of the cars, except in the case of permanently close-coupled sets (such as the "Southern Highlands Express" set.—Ed.), which have end valves only at the outer ends of the terminal cars. Similar flexible couplings and dummy couplings to those on the engine tender are provided at each end of each car on the side of the draft gear, opposite to the airbrake connections. Lagged branch pipes supply steam to radiating heaters in each compartment.

The heating units take the form of a 5 in. dia. steel tube about 5 ft. 9 in. long, and are located under the seats in compartment type cars. Radiating pipes are provided in saloon type cars, or compartments of the saloon type. Temperature of the compartment heaters may be varied at will by passengers operating the manual controls provided. Suitable baffles are provided around heaters to ensure correct heat distribution.

Steam at 45 p.s.i. pressure is supplied from the locomotive and traverses the entire length of the steam-heated portion of the train to the rear end valve, which is maintained in the closed position. Until the pipes become heated condensation occurs and the resultant water is eliminated from the circuit by thermostatically controlled steam traps and separators on each vehicle. The end of each heater unit farthest from the point of admission is connected to the atmosphere through a drain pipe. Exhaust steam, at atmospheric pressure, is at a maximum temperature of 212 deg. Fahr. Trains equipped with steam heating are required to be run as block sets coupled directly behind the locomotive. Additional vehicles must be attached only to the rear of steam-heated trains, unless they are equipped for steam heating.

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steel crossbar pilots (cowcatchers). The bogie wheelbase is 8 ft. 3 in., and they are spaced at 16 ft. 6 in. centres. Total wheelbase is 24 ft. 9 in. and length over buffers 36 ft. 8 in. Maximum height from rail level is approx. 12 ft. 5 in.

Typical of passenger service on the Camden branch of the New South Wales Railways is this two-car train hauled by a 20 class 2-6-4T. The train, a Down Camden local, was snapped by John Buckland in April, 1938, climbing the severe gradient out of Campbelltown. The Main Southern line can be seen in the background. (Block by courtesy "Truck & Bus Transportation".)

ELECTRIFICATION URGED
V.R. Geelong Line

Conversion of the Victorian Railways main south-west line to Geelong (45 miles) and duplication of certain sections at present single tracked, was recommended to the Parliamentary Public Works Committee during August by the Chairman of the Railways Commissioners (Mr. N. C. Harris). Total cost is estimated at £1,188,000, and the track mileage involved ranged from 68.6 to 79.9 miles according to what sections were duplicated as part of the scheme. It is proposed that duplication should be extended from Newport South Junction to South Werribee and from North Geelong "A" Box to North Shore, at a cost of £262,000. Only a moderate amount of earthworks and rearrangement of stations and yards would be involved as all bridges and culverts were built for eventual double-tracking.

The scheme would take second priority after the Gippsland main line electrification recently authorised, but it might be impossible to implement much before 1955. Freight traffic alone on the line had reached "record heights" during the war, and had continued at near-saturation level since. Passenger traffic was also increasing despite an "unattractive" timetable, said Mr. Harris. The proposed duplication works would enable the daily passenger service to be increased from a maximum of 11 to 18 trains. The electrification was estimated to save 17,000 tons of black coal and £52,000 per annum in working expenses.

Similar dual service electric locomotives to those being sought for the Gippsland service would be used. They would have the Co+Co wheel arrangement, be suitable for multiple unit operation, and have a maximum road speed of 70 m.p.h. Allowing for fixed charges and increased maintenance cost of double track, the estimated net annual savings resulting from electrification were expected to amount to £27,000.

NEWS IN BRIEF

At the recent **Transport Advisory Council** meeting held in Brisbane, presided over by the Federal Minister for Transport (Mr. Ward), much discussion

occurred on how to increase production of locomotives and railway rolling stock to meet the increasing traffic and age of existing units. The national deficiency of locomotive power and rolling stock was estimated to have lost traffic amounting to 1,357 million ton miles over all systems since the war. To overcome the deficiency, in the next five years, 50 heavy steam and/or diesel-electric locomotives, 36 medium steam locomotives, 150 new passenger cars and at least 500 freight cars would be needed each year. Consideration is being given to possible use of former munition factories for locomotive and rolling stock construction.

North British Locomotive Co., Glasgow, is the successful tenderer for supply of fifty R-class 4-6-4 passenger locomotives for the **Victorian Railways,** to cost £2,620,430. First deliveries are scheduled for 1951.

At a cost of £595,000, five hundred high-capacity bogie freight cars have been ordered by the **N.S.W.R.** from Waggonfabrik Talbot, Aachen, Western Germany. The Department also has 300 bogie MLV type louvre cars and 200 PHG type freight brake vans on order at a cost of £1,562,500 from British manufacturers.

The Western Australian Government has approved expenditure of £3,850,000 for modernising and expanding the capacity of the **W.A.G.R.,** excluding £500,000 for installation of C.T.C. between East Perth and Brunswick Junction (see September issue) already decided upon. Sixty additional locomotives to cost £2,250,000 will be bought in addition to 75 at present on order in Britain. Another £1,600,000 will be expended on freight car additions.

State Electricity Commission of Victoria has ordered 20 additional 20-ton capacity standard gable-bottom side discharging bogie coal cars for its 90 cm. gauge Yallourn electric system from A. E. Goodwin Ltd., St. Marys, N.S.W. To haul coal from the new Morwell Open Cut to Yallourn power station over a new 5 mile electric railway connecting the two excavations, the Commission is seeking bids for supply of 42 coal hopper cars of a new type having a capacity of 33 tons each. Three diesel locomotives are also being sought.

Queensland Railways seek tenders for supply of 200 additional FIS type steel low-sided freight cars. Tenders closed on August 30 for construction of approximately 6 miles 34 chains of earthworks in connection with the deviation of the Dawson Valley line to eliminate the famous Mount Morgan Rack Railway section.

Tenders for supply of from 17 to 25 Co+Co type electric locomotives for main line service are sought by the **Victorian Railways** for the Gippsland line electrification. Tenders close on November 30.

One hundred and seven flashing light highway crossing signals are now installed at level crossings in **Tasmania,** and 15 more are planned as soon as materials are available. Twenty-seven are on the Hobart-Launceston Main line; 31 on the Western line; 12 on the North-eastern line; six on the Sheffield branch and three on the Stanley-Trowutta branch.

The first of two Swiss-designed and built "Matisa" track ballast tamping machines has been delivered to the **Victorian Railways.** They are the first machines of their kind seen in Australia. Powered by a 70 b.h.p. diesel engine, the unit is self-propelled and can side-track itself under its own power when required. It is operated by two men. It is hoped to describe and illustrate this machine shortly.

The following locomotives have been converted for full oil-burning by the **South Australian Railways** — 501 and 508, class 500B 4-8-4's, 701, 703 and 704, class 700 2-8-2's, 158 and 201, Rx-class 4-6-0's, 167, 170, 172, 176, 184, 187, 238, 242, 243, 246 and 251, F-class 4-6-2 Tanks, all during August, 1949. Additional to 19 Narrow Gauge T-class 4-8-0's converted to dual coal-oil firing (see August issue), of which two were 180 and 203; the following "small power" was converted at Islington during August: 9, 140, 195, 200, 211, 219, 220 and 233, Rx-class. Engine 522, class 520, 4-8-4 type, was further converted from dual coal-oil operation to full oil-burning during August.

Victorian Railways are testing welded bars across the inside corners of two freight cars — I 9928 and IA 13091 — for securing lashings. They are identified by the stencilled "For test between Melbourne and Bendigo only." The 53 ft. engine turntable formerly at Kanagulk (Hamilton-Natimuk line) was removed and re-erected at Balmoral during July. This will reduce light engine mileage. During July A2-class engines were authorised to run from Yallourn to Yallourn North Coal Sidings and X-class between Spotswood and Newport Power Station Sidings. C-class engines are now permitted to run at a maximum speed of 60 m.p.h. in passenger service on the North-eastern line between Essendon and Albury.

Excellent progress has been made by contractors for the earth-works for the duplication and regrading of the 18 miles of the Gippsland main line of the **Victorian Railways,** and by the Departmental engineers, who have been aided by favourable weather for the past two months. On July 24, a single track deviation on the new formation for 65 chains near Warragul was brought into use between Drouin and Warragul. Subsequently, a construction siding has been constructed on the new formation at Drouin, where track-laying has commenced.

Owing to the vastly increased traffic on the main Gippsland line, the present Eastern and South-eastern district Train Control board at Spencer St. is to be divided into two separate controls. Building of the new control room will

Your Favourite Photo

Readers are invited to send a print of their favourite railway photograph for publication in this section. Prints should be as clear as possible, and the subject should preferably have some special appeal. Prints will be returned if requested.

New Zealand reader W. W. Stewart snapped this N.Z.R. J-class 4-8-2 at the head of the 8.40 a.m. Opua Express climbing the Parnell Bank out of Auckland.

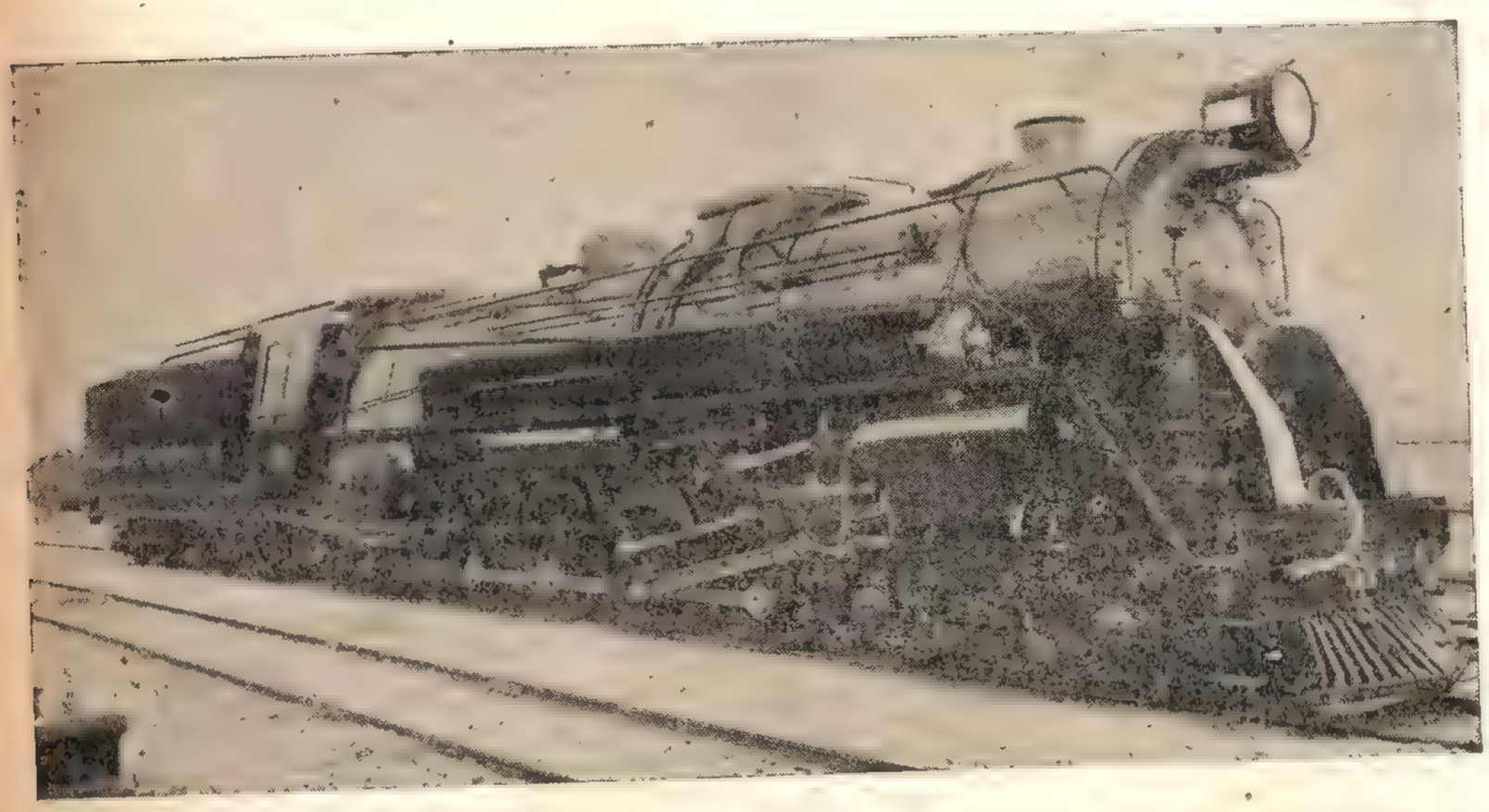
involve considerable structural alterations, and although the new control board has been completed, it may not be in operation for some months. The present board controls 43 points on the Eastern and 25 on the South-eastern districts, and is normally worked by one controller, who has frequently to be assisted during peak periods.

V.R. ADMINISTRATION CHANGES

The present Chairman of Commissioners, Mr. N. C. Harris, will reach the retiring age on January 25, 1950. He will shortly go on long service leave after 9 eventful years as Chairman of Commissioners. Mr. Harris joined the Department as an engineer in 1913, and for a time was Chief Mechanical Engineer. He will be succeeded by Mr. R. G. Wishart, aged 59, who has been a Commissioner since 1940. Mr. Wishart's appointment is for seven years at £3,500 per annum. He joined the Department as a clerk in 1906, and was in turn Commissioner's special officer and secretary to three Chairmen, including Sir Harold Clapp, with whom he toured overseas in 1934. Mr. Wishart was formerly Assistant General Superintendent of Transportation. A new Commissioner to replace Mr. Wishart will be appointed later this year.

Mr. Burt Kelly, Secretary for Railways, who succeeded Mr. E. C. Eyres in 1947, has been appointed Chairman of the Railways Board of Discipline. Although not due to retire until September next, Mr. Kelly will retire immediately to take up the new appointment. He was formerly for many years the Railways' advocate before the Transport Regulation Board. His successor is expected to be Mr. N. Quail, at present Chairman of the Railways Staff Board.

Engine Pictures



Tasmanian Government Railways' V class 200 b.h.p. diesel shunting locomotive. No. 7 of this class works at Launceston yards. Photo by courtesy C.M.E., Tasmanian Transport Department.

The 3 ft. 6 in. gauge is the only common feature of this month's engine pictures. The lower illustration is of a massive K class 4-8-4 of the New Zealand Railways. (Block courtesy "Truck and Bus Transportation.")

NEW "RIVERINA DAYLIGHT" IS RUNNING

After a trial demonstration run to Albury on September 13, the first of eight new air-conditioned "Daylight" trains for N.S.W.R. country main lines was inspected at Albury by V.R. Commissioner, Mr. R. G. Wishart, and senior officers on the following morning. The train returned to Sydney next day and entered regular service on September 19. The eight-car train is fully air-conditioned and features swivelling dining chairs in first-class and reversible seats in second-class. A 27-seat buffet-diner is included in the consist.

LATE NEWS

As we go to press it is reported that a buffet car is to be attached once more to the principal Melbourne-Bendigo trains. It is nearly ten years since this service was last provided, the only buffet car in service since being that on the Albury Express. Other cars have been stored; the one being returned to service has been renovated and modernised.

Improved services are to be inaugurated on some country lines this month, including extra trains to Gippsland.

BOOK REVIEW

"THE PERMANENT WAY"

By H. N. Greenleaf & G. Fyers
(Winchester Publications Ltd.)

From the track of the early British railway pioneers to the elaborate electric lines of the present day, every conceivable aspect of British permanent way construction and maintenance is described in detail. There are chapters on viaducts, tunnels, overhead and underground lines, not forgetting the "baby" lines, such as the R.H. & D.R. If anything, the material is too extensive and varied to be contained within so brief a compass. Overhead electrification and the London tubes receive rather scant attention. A useful index is provided, and there is an appendix giving a list of "Notable Tunnels, Bridges, and Viaducts." Four full-colour and 78 other illustrations are given, including, for no obvious reasons, elaborate sketches of early locomotives and trains.

(Our copy from McGill's Newsagency, Melbourne — 24/6.).

ELECTRIC TRACTION

Double-deck trolleybus No. 423 of the Municipal Tramways Trust, Adelaide, crosses King William Street from Hindley to Rundle Street, en route for Port Adelaide. F1 class tramcar No. 459 is loading for Enfield; note the driver watching the loading—a regular feature of Adelaide practice. Also of interest is the centre pole supporting both tram and trolleybus overhead. (Block courtesy Outdoor Advertising Association of Australia Inc.)

Random Reflections

By a Special Correspondent
Without prejudice to
"Railways in Australia"

Returning trippers, who have spent 16 or 20 weeks abroad, 10 of which are on the water, give me much amusement by announcing that they have made a deep study of transport. Their conceit in imagining that they have acquired all the answers to one of the most complex undertakings in our civilisation — transport — never fails to astound me. None of them would recognise a roster even if it barked at them; I doubt whether one of them would be able to tell you where our trams are made. One of the tribe came back and told how Glasgow was tearing up its tram tracks. Notwithstanding his deep study, he had been unable to distinguish between track reconstruction and track destruction. Another recommended gears of a certain type for our trams. He retired into his customary obscurity when informed that Melbourne was the first tramway in the world to instal such gears, and that our trams had had such gears since 1915.

Another favourite assertion is that no modern city in the world is going in for trams. Yet, in the last ten years, 26 of the largest cities in the United States have bought nearly 4,000 trams of the P.C.C. type, and have at the moment nearly another 800 on order; that every large city in the war-devastated countries of Europe is very busy indeed reconstructing its tramway systems; and that the declared policy of Russia is to provide all cities with a population of 100,000 or over with electric trams.

It is quite true that trams have gone from a number of cities; but they have disappeared because they would never in the first place have been installed 50 and 60 years ago had a more suitable vehicle been available. Take Bradford, for example, with its main streets not much wider than Melbourne's Little Collins Street. Nobody 55 years ago

(Contd. page 22, col. 3)

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AUSTRALIAN TRAMWAY NEWS

Edited by L. Marshall-Wood

News Items may be sent to 111, Esplanade, Elwood, S.3, Vic.

SYDNEY, N.S.W.:—

On 3/9/49, Government buses took over the Rockdale to Brighton-le-Sands isolated tramway, after 49 years of electric tramway operation. The last tram, No. 220, was well patronised for the "graveyard" run. The seven LP class trams have been transferred to Randwick Workshops where they will be reconditioned and distributed over the main system. Some lengths of rail have already been removed. Trams noted as running on the route in recent years are Nos. 154, 191, 216, 220, 223, 230, 386 and 387.

PR/I conversions, Nos. 1517 and 1562, entered service during July. Mr. R. Winsor has been appointed Commissioner for Road Transport and Tramways in succession to Mr. Neale. He was formerly Assistant Commissioner for Railways.

MELBOURNE, Victoria:—

Further to previous information on the fare rises from 11/9/49, "all-night" rates are increased a 1d. to 5d. and 9d., with 7d. to St. Kilda Beach. Round-trip tickets have been abolished and the maximum normal fare increased to 7d. Air-engines for sliding doors on future tramcars are of a new type, designed by the M. & M.T.B., who have had the design patented. Figures released by Mr. H. H. Bell (retiring Chairman of the Board) show that in the last 14 years the Loan Indebtedness has been reduced by £3,241,863; £546,849 has been spent on new lines; reserve funds have increased from £503,073 to £6,268,592. Apart from the construction of a large number of new trams, buses costing £855,656 have been built. It is claimed no other transport authority of the same size can beat those figures.

MELBOURNE — V.R. Tramways:—

Rear-vision mirrors are to be fitted to the older drop-centre bogie cars, No. 36 being the first equipped. It is now three years since the Transport Board approved the V.R. plan to bustitute the Black Rock line, and nothing has been finalised. The move is being bitterly contested by the Sandringham Council, who are trying to obtain M. & M.T.B. control. The Minister has stated that staff-shortages do not permit extensive track rehabilitation of the Brighton route.

Fare rises effective from 1/9/49 are ½d. on all fares except the first section on the Brighton line. Periodicals are up 12%, and through tram-train tickets to the city are up 1d. each way. Previous fare rises occurred in 1922, 1928 and 1947.

VICTORIA — S.E.C. Tramways:—

Fares have been increased on the three country tramways from 15/9/49. The rise is 1d. on all fares, except the Eaglehawk route at Bendigo, which has been raised to 6d. for the through journey. Tourist Tickets, a popular innovation, have been abolished. The S.E.C. have been anxious for a fare rise for years to cover deficits. The Report by Mr. H. H. Bell, Jnr., on the Ballarat system has not been completed. The A.E.T.A. has completed a Report on the future of the Geelong system in reply to Mr. Bell's recommended bustitution for that city.

ADELAIDE, S.A.:—

Mr. G. M. Mackay, a member of the M.T.T., after a visit to England, said that Adelaide's municipal transport compared favourably with English systems.

BRISBANE, Q.:—

The Deputy-Managership, now vacant, has been advertised for at a salary of £1,500 per annum. The previous occupant was Mr. Risson, new Chairman of the Melbourne Board.

FREMANTLE, W.A.:—

Latest figures available show that the F.M.T. & E.L.B.'s lighting and tramway services made an overall profit of £15,187. 8,489,475 passengers were carried, including 1,654,182 by the buses. The Board operates 10.452 m. of tramway routes and 11.9 of buses, using 27 and 19 vehicles respectively. Short branch routes to North Fremantle and Melville were bustituted in 1938, but tramway operation on the rest is still official policy.

THE AUSTRALIAN

ELECTRIC TRACTION ASSOCIATION

Affiliated with

The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President : C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone : LF 1665)

If outside Victoria, communicate with the nearest representative:

ADELAIDE : Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND : Mr. D. Fallwell, 3 Matai Rd., Devonport, N.Z.
CHRISTCHURCH : Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON : Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE : Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH : Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY : Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON : Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.

(From page 21)

would have advocated electric trams for such narrow streets if petrol buses had been available. But the bus was still 15 years in the future, and so the only alternative to the horse-drawn bus was the electric tram. Gradually trams are going from Bradford, and rightly so, for physically it is not and never has been a tram city. Or, take such thriving large towns as Burnley and Keighley in England, and Dunfermline, Kirkcaldy, and Kilmarnock in Scotland. In the early years of the present century all these places rushed the electric tram. They have gone now for the very simple reason that their passenger movement per hour is well below the tramway minimum. When you have fewer than 2,000 passengers per hour you are in the trolleybus or Diesel bus class. For mass transportation, nothing yet invented comes anywhere near the efficiency of the tram.

Former M. & M.T.B. Route Numbers

By "Annett Lock"

The present system of route numbers was introduced by the Melbourne & Metropolitan Tramways Board just prior to the Melbourne Centenary in 1934. As some cable lines were still operating, route numbers had to be altered after electrification to allow for the new electric routes.

Route numbers 1 to 9 were the same as at present (see R. in A. 9/49—Ed.), but 9A was City-Thornbury and 9B City-North Fitzroy, instead of 9D and 9E as now. Route 11 was the Lygon Street-St. George's Road shuttle service, but it is unlikely that cars ever carried the route numbers. The present route 15, from St. Kilda Beach to City and Moreland, originally turned north up Sydney Road and ran to North Coburg. (Connecting curves at Moreland have since been removed.) Route 16 ended at Coburg, on the North Coburg route, whilst 17 ended at East Brunswick as at present. The modern 16, St. Kilda Beach-City, then used 18. Coburg area cars terminating at Flinders and Swanston Streets, City, instead of proceeding on to St. Kilda Beach, used 19 from North Coburg, 20 from Coburg, 21 from East Coburg, and 22 from East Brunswick. The present routes 27, 28, 40, 41, 42, 44, 45, 46, and 47 were always the same, but Essendon cars, then using William Street, City, showed 51 from the Keilor Road terminus, and 52 from Essendon Station. Route 54 remained unchanged, and routes 55 and 56 remained as before until the opening of the Hanna Street diversion, when they were extended. Footscray's four routes, including one through route, used numbers 57-60, but the latter are now allocated to the main system, and Footscray has no numbers. The old Brighton Cemetery-St. Kilda Beach cross-suburban line utilised the present East Brighton-City route number 64, while 65 was not issued, and Point Ormond-Darling Road carried 66 as now. The Elsternwick-Point Ormond shuttle was numbered 67, but the single truck cars used on that route never carried route numbers, and 67 was transferred. The peak-hour route from Darling Road to St. Kilda Beach ran in those days as 68, but this route has since been discontinued.

The remaining routes, 69-79, existed as now, while the present route 80, City-Burnley, had not been thought up!

(Route map of the M. & M.T.B. lines, and a track map of the city area showing route numbers, appeared in "Tram Tracks" for March, 1948, and May, 1949, respectively.—Ed.)

THE TROLLEY-BUS STOP

SYDNEY NOTES

Numbered stopping places are being introduced on the Kogarah trolley-bus routes. The only previous use of such numbers in New South Wales has been on the Glebe tram route in Newcastle.

Four of the former Wylde Street trolleybuses are now reported to be at Ramsgate Depot for the Kogarah lines. The exception is No. 3, which is understood to have deteriorated beyond the repairable stage.

NEWS FROM NEW ZEALAND

The Future at Auckland

A decision on whether or not the tramways are to be retained will be made early next year by the Auckland Tramways Board, and will depend largely on the success or otherwise of the Herne Bay trolleybuses. The latter were to commence running on the 23rd September. Trams will continue to provide a rush-hour service to Ponsonby via the College Hill section.

Chassis for Dunedin

The first batch of trolleybus chassis

Melbourne & Metropolitan Tramways Board

EMPLOYMENT

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FOR CONDUCTORS AND
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A congenial occupation offering regular employment.

All training time paid for — Uniforms provided.

Free travel on all lines — 40-hour, 5-day week.

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Non-contributory retiring gratuity scheme.

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Also Vacancies for MOTOR MECHANICS
Bus Parker-Cleaners (must be Truck Drivers)
200 Unskilled Men (for Track Construction)
Junior Clerks (Male, 14-16 years)

APPLY PERSONALLY TO ROOM 6, GROUND FLOOR, TRAMWAY BUILDING, 616 LITTLE COLLINS ST.
9.30 a.m. to 4.0 p.m. (Saturdays and Holidays excepted).

Sydney's Railway Square, always a jumble of trams, double-decker buses, cabs, and pedestrians, differed little fifty years ago, except that the trams ran by steam and Dobbin pulled the rest of the traffic. One of those new-fangled electric trams (a two-car set) can be glimpsed in the background, turning into the old Redfern Station. These pioneers of the present Circular Quay railway service ran via George Street, the Pitt and Castlereagh Streets route coming with the new Central Station in 1906. Note the two-colour route board, precursor of the present destination signs, on the city-bound 3-car set from Balmain. Also of interest is the railway-type signal box since replaced by a more ornate edifice which includes a large waiting shed. The tracks coming in on the right of the picture are the newly-laid George Street electric lines. (Block lent by "Truck and Bus Transportation.")

for Dunedin has arrived at Wellington. Some bodies will be built here, others at Christchurch.

Christchurch, Too.

The Christchurch Tramways Board plans to purchase 40 trolleybuses to replace trams on the New Brighton and Sumner routes. (D.F.)

TRAMS AT GOULBURN

Few electric traction enthusiasts have heard of the erstwhile electric tramway at Goulburn, N.S.W. During Jubilee celebrations (can anyone give the exact date?) many years ago, a single car ran on a short stretch of single track—less than ¼-mile—in Market Street, Goulburn. The fare charged was 3d., and the line seems to have been a novelty rather than a serious attempt to provide transport. Mr. J. K. Moir, president of Melbourne's famed Bread and Cheese Club, who furnished this information, has tickets from this interesting line.

SYDNEY'S UNDERGROUND

Of interest in connection with the current underground railway construction programme in Sydney, N.S.W., is this diagram-sketch of Dr. Bradfield's plan for the central city area. Circular Quay Station is well on the way, but the "Proposed Western Suburban Railway" has been discarded, and the two spare tunnels at Town Hall are to be used for the first part of the Eastern Suburbs line. This will be given priority over the line from St. James shown on the diagram, and will turn sharply to the right with a station under Martin Place at the location of the word "Western," but at right angles to it. The line will continue under the St. James-Quay tunnels to King's Cross and thence to Bondi. In the other direction from Town Hall, this line will run by a new route to a new underground station at Central, which is outside the area shown, to the right of the six tunnel mouths. The future of the "Proposed Southern Suburban" is more than vague, and North Shore trams continue to use the completed portion of the tunnels. (Block by courtesy of the Victorian Railways.)

WATTLE PARK

FOR THE FINEST SPORTING 9-HOLE GOLF COURSE IN MELBOURNE. TRAM FROM BATMAN AVE. (ROUTE 70)

HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

MELBOURNE NOTES

A long line of cars outside Jolimont shops awaiting motors and electrical equipment bears mute testimony to the delay in the V.R. suburban electric rolling stock programme. Opportunity is being taken, however, to try out two types of experimental ventilators on existing cars. 417T has been fitted with two rotating ventilators; 453M and new cars from 458M onwards have a torpedo type.

The Hawthorn-Kew shuttle has been worked recently by 164ABM in place of the regular 2-car train.

An unusual train from many points of view is the 5.03 p.m. ex-Flinders Street to Frankston, which hauls steam trailers (4 cars and a van) for Stony Point. The electric cars seen recently comprised an AM altered to 2nd class with metal screw-on plates, two 1st/2nd compo G's, and a standard AM. Quite a load for the two AM's.

BIG TRANSFORMERS FOR N.S.W.R.

New South Wales Railways have ordered from the Brush Electrical Engineering Co. Limited, of England, four 10,000-kVa transformers. They will be 3-phase, 50-cycle, 66,000/11,000-volt Delta Star connected with h.v. tappings controlled by fully automatic "on-load" tap-changing equipment.

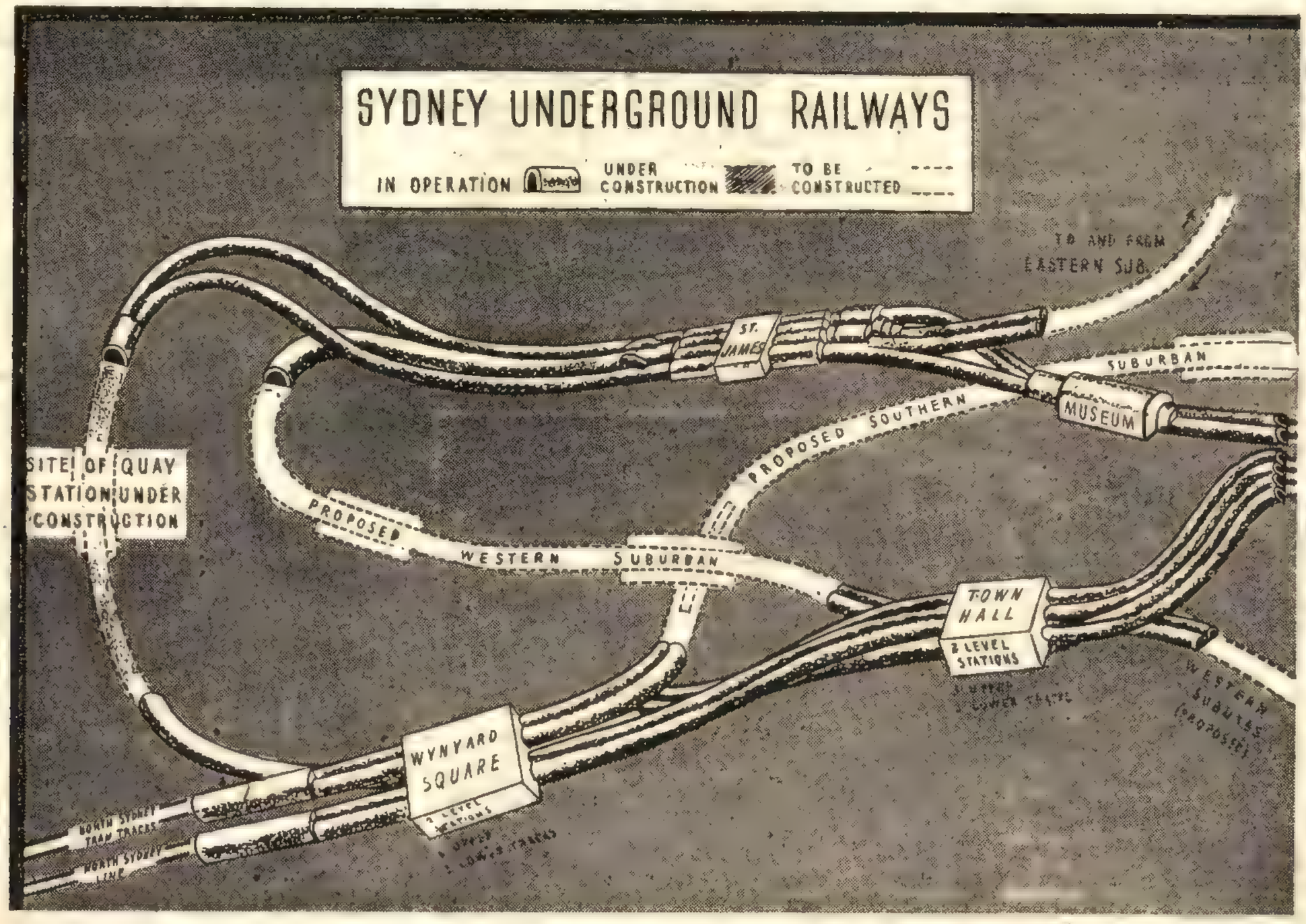
Cleaning Electrical Gear On Tube Trains

(Extract from "Engineering")

The London Passenger Transport Board, in co-operation with Messrs. Dallow, Lambert and Company Limited, of Leicester, recently developed a satisfactory method of removing the dust which becomes packed in the ventilating ducts of Metadyne machines and motor-generators on their rolling stock. The dust, which may cause over-heating or upset the balance of the rotor, was previously removed by blowing with compressed air, but this was unsatisfactory, because the dust was scattered and not collected. Although, with the new method, the dust is blown by compressed air, it is collected by an extractor, working on the vacuum-cleaner principle. The left-hand hose is provided with a funnel to connect to the air exhaust duct of a Metadyne machine, and the right-hand horse is fitted with a hood which is secured by cords to the motor-generator to be cleaned. An operator directs a jet of air, from the shop compressed-air line, into a Metadyne machine, while the extractor sucks the dust out at the farther end.

The extractor is supported on four wheels, and is normally used in the pit at the Board's Neasden depot, where cars are brought for cleaning. At one end of the upper half of the extractor, a 1-h.p. motor drives the vacuum fan which is connected to the lower chamber of the extractor. The lower chamber contains a filter consisting of 25 bags stuffed with sisal grass, which separate the dust from the air stream. When the filter bags become impregnated with dust, they are cleaned by agitating them with a rod which is permanently connected to the extractor for this purpose. The dust is allowed to settle in a removable tray at the bottom of the chamber.

The particular flexible hose in use is connected to one or other of the two inlets to the extractor, which are situated one at each end and communicate with the lower chamber. The funnel and hose are supported on a scissors-type elevator, placed in the pit, which may be raised or lowered by turning a handwheel. The air from the extractor, after being cleaned, is blown out through an opening in the top of the extractor. The current for the fan motor is taken from the 600-volt direct-current overhead trolley circuit in the shop, and is fed to iron-clad switch-controlled sockets situated at intervals along the pit wall. The extractor case is 2 ft. 4 in. in width, 3 ft. 1 in. in length, and 4 ft. high.



A.E.T.A. NOTES

MELBOURNE BRANCH
Annual Meeting

To the tune of that cheerful good fellowship which has characterised similar gatherings in the past, the Sixth Annual Meeting of the A.E.T.A. was held at St. Bede's Hall, Elwood, on 3rd September.

The annual election of office-bearers resulted as follows:—President, Mr. C. L. Busch; Vice-President, Mr. J. Beckett; Joint Secretaries, Messrs. P. W. Duckett and K. S. Kings; Treasurer, Mr. J. B. Stranger; Recorder, Mr. N. H. Gipps.

Spontaneous moves to re-elect last year's office-bearers showed the high regard in which these gentlemen are held, but, unfortunately, most were unable to accept nomination owing to pressure of other duties. In this respect, it should be mentioned that our joint secretaries have accepted office at considerable personal sacrifice, and any assistance given them will be appreciated.

Our new president is a foundation member, and well-known to all, having served in several posts previously.

Mention should be made of last year's vice-president, Mr. Leon Marshall-Wood, who has been a capable and energetic officer throughout the existence of the Association. Prevented by his duties from taking an active part in the guidance of affairs, Mr. Marshall-Wood continues as a councillor, and also as the editor of Australian Tramway News in these pages.

Regrettably absent was former secretary, Mr. D. C. Wishart, who was called away to the country at the last moment.

Melbourne Branch has always been unfortunate in this respect — nearly half our members are absent from the city for lengthy periods, or have irregular hours of duty. This does not, however, excuse the lamentably poor attendance — there was scarcely a quorum — and it is to be hoped that future annual meetings will see an improvement. Apart from the important business, these affairs have always had a pleasant social character.

The birthday cake, which has become a regular feature, was cut by the new and retiring presidents amid scenes of enthusiasm, and the evening came, reluctantly, to an end.

Too much cannot be said of the untiring efforts of Messrs. Gipps and Stranger, who were responsible for the catering and the preparation of the hall.

"HEADLIGHTS" COSTS MORE.

In view of the recent devaluation of our national currency, in terms of the dollar, the annual subscription rates for "Headlights," the attractive monthly magazine of our New York affiliate body, will be increased to 18/- per annum for A.E.T.A. members, and 22/6 per annum for non-members.

There is, of course, no extra charge for subscriptions already accepted at the old rate.

GEELONG TRAMWAYS
A.E.T.A. Report

Following the publication of the report by Mr. Hector H. Bell, Jnr., on Geelong's passenger transport services, a committee was appointed by the Council of the A.E.T.A. to examine the situation. The findings of this committee are summarised hereunder.

Whilst agreeing with most of Mr. Bell's statements and figures, the committee felt that he had not given adequate consideration to the possibility of retaining and modernising the existing tramways. (In his report, Mr. Bell recommended inter alia the substitution of diesel buses for the trams. Mr. Bell also relied heavily on the institution of a suburban rail service by the Victorian Railways, and the practicability of this in the forseeable future is doubted.) It was agreed that the present tramway system was inadequate but, rather than the contemplated scrapping, it was felt that minor modifications could be made which would, with little effort or expenditure, enable the trams to carry the heavy industrial traffic currently channelled elsewhere, and to stabilise the financial structure of the system.

Recommendations

Principal points are:—

1. Tramway system to be retained and modernised, and to be developed to suit the changing needs of a progressive city.
2. Diesel buses to be operated on cross-town and developmental routes where traffic does not justify electrification. Smaller buses to be operated as feeders to tram routes where local services are necessary. City bus routes to be controlled, if not owned, by the tramway operating authority.
3. The present NORTH tram route to be extended on open ballast track to serve the North Shore industries, and connection to be made via WEST to other routes.
4. New trams to replace all small single-truck cars, and ultimately most of the present rolling stock. (A sketch of a suitable type of tram was appended, so designed as to be suitable for use in Ballarat and Bendigo, thus enabling cheaper production if those cities require new rolling stock.)
5. Open ballast track on private right of way to be used wherever possible for extensions, enabling safe high speed operation, and reducing construction and maintenance costs. Double track and passing loops to be constructed with 11 ft. track centres and present double track to be widened when relaying or other major works are in progress.
6. Adequate portion of each year's revenue to be set aside for future construction and extensions. If another authority is to operate the system, an examination of the outstandingly successful financial methods of the M. & M.T.B. might be beneficial.

Press and Radio

The Report attracted considerable attention from newspapers and radio stations. The Geelong "Advertiser" spread it over a column-and-a-half, and later reported on its reception by the City Council. Other papers also mentioned the Report.

Announcements were made on the Victorian News Service of the A.B.C., and several commercial stations, one of which later broadcast an interview with the A.E.T.A. Treasurer (who was the secretary of the Geelong Committee).

The Geelong City Council has decided to invite the A.E.T.A. to take part in future discussions on the city's passenger transport.

Copies Available.

Copies of the report are available from the A.E.T.A. Treasurer, Mr. J. B. Stranger, 14 Queens Rd., South Melbourne, S.C.2 (price 5/-).

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THE WAITING ROOM—

Letters to the Editor

SHAY LOCOMOTIVES

The Editor,
Railways in Australia.
Dear Sir,

In your July issue you published a photo of a Shay geared loco and asked if any reader could give details. I cannot tell you very much about it other than that it was one of two Shay geared locos used on the Nambour to Mapleton tramway in Queensland, and I believe the line is not used now. I think that further details of these two locos could be had from the Shire Council of Nambour (about 70 miles north of Brisbane). I saw these two locos in operation in 1943, and they were engaged mainly in timber traffic from the mills at Mapleton.—Yours etc.,

RAY BRUCE.

Alphington, Vic.

(Details of Mapleton locos were given some time ago in the A.R.L.H.S. bulletin, but we were not sure that the loco depicted was in fact from that line. Understand part of the line—from Nambour to the Moreton Mill—still in use, having been acquired by the mill, which also bought the locos. One is still in service, the other stripped for replacement parts.—Editor.)

The Editor,
Railways in Australia.
Dear Sir,

With reference to the photograph of Shay geared locomotive in July issue, an extract from the "Railway Magazine" describing two locomotives which could be identical with that in the photograph, reads as follows:

"AMERICAN-BUILT SHAY LOCOMOTIVES IN AUSTRALIA

The last two surviving locomotives of a timber tramway in Victoria have now been withdrawn and sold. They were Shay geared machines built in 1912 by the Lima Locomotive Works of Ohio, and exported to N.S.W., where they were later bought by the Victorian Hardwood Co. for hauling timber over its 3-ft. gauge line from Yarra Junction to Powelltown and Splitter's Creek. Over this 19-mile timber tramway, with its many sharp curves and steep gradients, loads up to 100 tons were hauled by the locomotives, which burned wood blocks and were fitted with diamond-shaped spark-arrestor stacks. Their wheel diameter was 24 in., and they weighed 30 tons. Over-all measurements were 42 ft. 6 in. length and 7 ft. 9 in. width. The tender capacity was about 1,000 gallons, and 150 lb. boiler pressure.—Yours etc.,

F. C. NICHOLS.

Ryde, N.S.W.

CONSTRUCTIVE CRITICISM

The Editor,
Railways in Australia.
Dear Sir,

One glance at the "Letters to the Editor" section of R. in A. since its inception shows that many readers, whether members of the A.R.L.H.S. or not, are in favour of constructive criticism of varying aspects of railway operation and practice in this country. Even though I am a member of the A.R.L.H.S., I am in favour of a little constructive criticism occasionally, though I believe that the Society is doing the right thing by itself to maintain cordial relations with the railways in suppressing criticism.

Let me clarify that statement on criticism. Australia is a vast continent with a small, in comparison to its size, population as compared with, say, the United Kingdom and the United States, but surely Australian Railways could make a concerted effort, even if in a small way, to introduce more modern rolling stock. Australian Railways to-day are, more than ever, feeling the "pinch" caused by the expansion of the Airways companies, and something must be done if the pre-war "trade" is to be regained. In America it costs far more to travel in the A.T. & Santa Fe's "Super Chief," and the New York Central's "20th Century Limited," to quote two examples, than it does to travel by the airways, but are the U.S. Railroads losing anything by it? NO. In fact, it is just the opposite. But here in Australia, even though the Railways have a marvellous safety record—far safer than the airways—the Railways are losing traffic notwithstanding higher air fares.

With regard to criticism by "Railways in Australia," I would like to make a suggestion, Mr. Editor, and it's yours for what it may be worth. What about communicating with the various Railway Administrations, explaining the thoughts of the Editorial staff as regards criticism, and thereby obtain the Administrations' opinions on the matter. Should they agree to constructive criticism, then well and good, reintroduce the Editorials, but if they are against it, then leave the matter as it is now—no editorials.

However, before passing from this subject of criticism, I would like to point out that in neither the English "Railway Magazine," the American "Trains," nor in any other magazine which I have seen, are there any Editorials or such like criticising the Railways, and I sincerely believe that they, too, in their own way and sphere, could find plenty of reasons for criticising their Railways. If "Railways in Australia" is to reach anything near par with these overseas magazines, and it could with time and care, and notwithstanding my previous statement, I think that all Editorial criticism should definitely be omitted.

Why not some praise for a change? Especially when Australian Railways, N.S.W. in particular, have the highest safety records in the world, and any form of transportation, too, for that matter.

There is another matter on which I would like to say a few words. Some may argue that this is a matter for the A.R. & L.H.S., well some of it may be, too, but some certainly could be handled by "Railways in Australia." The subject to which I refer is Private Railways or Tramways—e.g., Emu Bay R. Coy., Mt. Lyell Mines & R. Coy., Rinieson Bell 2-ft. gauge tramway, all in Tasmania; B.H.P. at Whyalla, S.A., at Newcastle and other cities; The Silverton Tramway, N.S.W.-S.A.; Sugar Cane Tramways in Aust.; South Maitland R., N.S.W.; the Midland R. Coy., W.A., and many others throughout Australia. There are other sections, too, such as the Q.G.R. isolated section between Cooktown and Laura, etc.

What about some news, notes and photographs, etc., on these in our magazine—surely there are some who know something of these railways and tramways and have photographs thereof. I could start the ball rolling with some photographs of the Emu Bay and Mt. Lyell lines, but there will be others with better and more varied photos than mine.

Wishing you every success in the future.—Yours etc.,

H. J. WRIGHT.

Ashfield, N.S.W.

(Most of the lines mentioned have been described at some time in the A.R.L.H.S. bulletin, and we have published a few pictures. We have

(Contd. page 28, col. 3)

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held:—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

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Our Fan Mail

A. N. FOUNTAIN, Albert Park, Vic.—Shall look forward to photos. New address noted.

NOEL F. REED, Northbridge, N.S.W.—Have passed on news items to editors concerned. Saving prints for possible article.

L. F. HOLMES, Lower Ferntree Gully, Vic.—Thanks for prints; some not suitable for use, but hope to feature at least one. "Fish" is good, but shadows would prevent good reproduction.

J. H. KELLY, London, England.—Thanks for good wishes. The "Tramway Notebook" is rather nebulous at present, but will comprise complete rolling stock data.

L. LALOR, Sea Lake, Vic.—Using print next issue, thanks. "Letters to the Editor" handled here at No. 29.

(From page 27)

some good shots from the Emu Bay Company and other private railways, but financial problems are preventing their use at present. We shall be glad to receive good, clear prints from readers at any time with a view to future use. The very isolation of the lines you mention is one of the biggest factors limiting photos, etc.—Editor.)

2,000-TON TRAINS

The Editor,
"Railways in Australia."
Dear Sir,

With reference to the letter by F. C. Nichols on page 17 of August RAILWAYS IN AUSTRALIA, the photograph of a D-57 class engine on a New South Wales Railways Up goods train at Emu Plains with a 2,000 tons test load in 1936, where all vehicles were fitted with grade control valves, is quite authentic. The load was conveyed from Katoomba to Penrith, which is entirely down hill or level, with the exception of two very short sections of adverse grades.

Mr. Nichols may, however, have misunderstood the use of the word UP journey, which means towards Sydney, not "up" the mountains. No load of 2,000 tons has ever been hauled up the Blue Mountains, nor is it within the limits of possibility.

The present goods load from Enfield to Lithgow on Down journey is 630 tons for a single 57 class engine assisted from Valley Heights to Katoomba over the 1 in 33 grades by an engine of the 50, 53 or 55 class, while two 57 class would be allowed to haul only 800 tons between Enfield and Lithgow, other assistance being prohibited. As the result of recent tests it has been decided that no more than 1,500 tons can be safely brought down the mountains from Katoomba to Penrith on any train. Between Wallerawang and Enfield on the Up journey the loads will be as follows:—

Train hauled by single 57 class engine assisted by:—

Wallerawang-Lithgow . . . One 50, 53 or 55 class in lead.
Lithgow and Zig Zag . . . Two 50, 53 or 55 class in lead and similar engine in the rear.
Zig Zag-Blackheath . . . One 50, 53 or 55 class in lead.
Penrith-Kingswood . . . One 32, 34, 35, 36, 50, 53 or 55 class in rear, if train be stopped at Penrith.

The maximum speed permitted for 57 class engines over the Blue Mountains is 35 miles per hour. The reference to 60 m.p.h. is, of course, absurd, as this class of engine is not suitable for a speed above 40 m.p.h.

Yours, etc.,
C. C. SINGLETON.
Thornleigh, N.S.W.

RAILMOTOR ACCIDENT

The Editor,
"Railways in Australia."
Dear Sir,

Re railmotor accident, Geelong line.

As Mr. Gavan Duffy points out, the railmotor concerned was definitely not one of the McKeen cars — although I remember seeing a McKeen car at Geelong many years before 1929.

If the accident mentioned is the one I have in mind, it was one of the Leyland double-enders which were used to a large extent between Melbourne and Geelong.

Yours, etc.,
LEONARD LALOR.
Sea Lake, Vic.

Railways in Australia

and

A.R.L.H.S. BULLETIN

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OUR COVER

New South Wales Railways 57 class 4-8-2 heavy freight loco at the head of a fruit express. (NSWR official photo).

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The G.P.O. is opposite

PULVERISED BROWN COAL
V.R. Loco. Fuel Experiments

Despite Departmental reluctance and extreme secrecy surrounding the current tests of pulverised fuel firing being undertaken with Victorian Railways engine No. 32, X class, sufficient information has "leaked out," often from unexpected quarters, to enable this brief survey to be published.

The problems associated with burning brown coal as a locomotive fuel are many and difficult of solution. Twenty-seven years ago, the Victorian Railways experimented with an American pulverised fuel equipment known as the Fuller-Lehigh system, for two years, with inconclusive results. The principle of "dust-firing" whilst proved practicable, was not sufficiently attractive economically, or mechanically reliable enough, to be adopted on a large scale.

Much research and many years of practical experiments were undertaken by the Deutches Reichbahn (German State Railways) in collaboration with the principal locomotive building firms and brown coal mining syndicates between the two world wars. The critical shortage of coal in Australia, during and particularly since the war, coupled with the general unsuitability of much coal supplied for locomotive purposes, rather naturally led to further practical steps being undertaken by the Victorian Railways to test the practicability of large-scale conversion of steam locomotives to burn the native brown coal on the German system. It has long been accepted as high Government policy that industry, and, as far as practicable, transport in Victoria, must be rendered independent of black coal supply from New South Wales. With this end in view, in 1946 the State Government sent two Victorian Railways engineers to Occupied Germany to study the German application of pulverised brown coal dust-firing to locomotives. They were Messrs. W. O. Galletly and W. H. Chapman, of the Rolling Stock Branch, and their report has been published as a comprehensive illustrated document issued under the auspices of the British Intelligence Objectives Sub-Committee in London and printed by H.M. Stationery Office.

During their visit to Germany, Messrs. Galletly and Chapman were able to contact most of the technical men associated with the development and testing of the system, together with its installation in German locomotives, although all these are now reported in the Russian zone of Germany, and are believed to be immobilised for lack of spare parts. Entry to the Russian zone was denied the mission, whose investigations disclosed that from 1923 onwards the German State Railways, acting in technical conjunction with the major locomotive builders and brown coal mining syndicates, had conducted considerable research and many experiments into all phases of the problem of utilising their vast resources of brown coal as a locomotive fuel. (Known German reserves of brown coal are second only to those known to exist in Victoria, but have been further developed over a longer period.—Ed.).

Until 1928 experiments were confined to stationary locomotive-type boilers, but between 1928 and 1930 ten freight locomotives were converted to dust-firing. Two classes were involved in the tests and were fitted with three separate dust-firing systems, of which the "STUG" combined-drive system, developed principally by Henschel & Sohn, of Kassel, was generally regarded as the most satisfactory, and capable of most general application. Following the report of Messrs. Galletly and Chapman to the Victorian Government, two such units were ordered from Henschel & Sohn, and delivered in 1948 for testing with dust derived from the Yallourn briquetting factory of the State Electricity Commission.

The "STUG" combined-drive dust-firing system is, as the name implies, driven by a single 25 b.h.p. steam turbine actuating the two blower fans and the dust conveyor screws. This turbine unit is mounted on the rear of the tender so that its noise will not unduly inconvenience the enginemen. The blower fans supply the primary air to the dust burners in the firebox. In the course of conversion to dust-firing, the conventional locomotive grate and ashpan are dispensed with and a new fire-brick-lined ashpan-cum-furnace floor is provided. The brick arch length is increased and altered in angle, and the two "STUG" burners are installed in the backplate of the firebox below the foundation ring on either side of the longitudinal centre line, in the case of the German conversions. The butterfly type firedoor was replaced by a hinged type door, provided with a mica-covered observation hole. The firedoor is secured in the closed position by lugs and bolts whilst the locomotive is in operation.

The rate of dust-firing can be regulated within precise and fine limits to suit the operational conditions encountered on the road. Good combustion is reckoned to produce almost colourless gases from the smokebox. The primary air supply is automatically adjusted proportionate to any change in the dust consumption rate. Dust from the container is propelled forward by the two feed screws, which rotate in opposite directions. Each can be operated independently of the other, and is controlled from a separate clutch lever. At the forward end of the conveyor screws is a dust mixing chamber where the primary air supply is introduced by the blower fans. The highly explosive dust-air mixture is conveyed to the burners by means of flexible couplings between engine and tender. Only approximately 40 per cent. of the total combustion air requirements are supplied as primary air in order to reduce the load on the blower fans, and consequently the turbine. The remainder is secondary air, admitted through manually-operated dampers beneath the firebox. In the German applications, some secondary air is admitted at the firedoor, but this does not appear to be the case in Victoria. Secondary air, besides aiding combustion, assists to cool the highly-stressed firebrick lining of the firebox.

A sand bin is provided to enable ash deposits, known as "swallow's nests", which form on the tube plate to be removed whilst running by introducing sand through the firedoor observation hole, similarly to oil-burning locomotives. The sand and ash is exhausted up the stack. Most of the equipment is in the tender, which was completely reconstructed, reducing the water capacity from the standard X-class 8,600 gallons by 2,000 gallons. The tender is in effect "back-to-front" with the water filler hole and major portion of the water space at the front. The covered coal-dust hopper with a capacity of 10 tons of dust has three hermetically-sealed filling hatches, and tapers downwards to two longitudinal troughs which house the feed screws, each of which has a maximum output of 1½ tons of dust per hour, corresponding with the maximum capacity of each burner. The dust hopper is equipped with compressed air turbulence jets for use should any dust blockage occur at the feed screws. The front of the tender is provided with a control board with pressure gauges, tachometer for the turbine, turbine throttle wheel, and other controls, including feeler gauges to determine the dust level in the hopper. The conveyor screw control levers are mechanically interlocked with the turbine throttle control.

WATTLE PARK

FOR THE FINEST SPORTING 9-HOLE GOLF COURSE IN MELBOURNE. TRAM FROM BATMAN AVE. (ROUTE 70)

The lighting-up procedure is similar to that for oil-fired locomotives; a wood fire is kindled first on the firebox floor, but an ignited piece of oily waste inserted in front of one of the burners is equally effective. When lighting-up from cold an auxiliary steam (or air) supply is necessary to drive the turbine until sufficient boiler pressure is available. An all-steel boiler has been provided in Eng. 32 X, as the intense local heat generated is similar to the effects of oil-burning, causing rapid scouring and eventual failure of copper firebox plates. Extreme precautions against fire and explosion, including prohibition of the use of naked lights and other hazards likely to cause an explosion of the dust-air mixture are necessary when refuelling. The turbine must be shut down and the burners extinguished. Refuelling is accomplished by compressed air forcing the dust through a valve in the bottom of the dust-conveyor car hoppers, which are connected with one of the filler hatches on the tender by an air-tight flexible hose. The escaping air from the tender hopper must be carefully filtered out of the other filler openings to guard against escape of dust and possible explosion.

No. 32 was outshopped from Newport on July 1 last, and for the following two months was given stationary tests at North Melbourne to familiarise enginemen with the operation of the complex equipment and to determine boiler performance and fuel consumption rate. The first road test was made to Woodend and return on October 3, hauling a limited load of 385 tons, including dynamometer car. Further road trials were undertaken in following weeks, including return trips to Bendigo hauling 658 ton loads, which were run in normal X-class time of five hours for the hundred miles. These later trials are regarded as very satisfactory, and for comparative purposes dynamometer tests have been run with similar loads by X-class No. 30 burning N.S.W. Western (Lithgow) coal of average quality. From the point of view of fuel costs alone, there is a £2 per ton advantage in favour of pulverised brown coal, which however, is more difficult and expensive to transport (special transport cars being necessary) and more expensive to store. The results will not be conclusive until many months' testing have been concluded, and co-related and compared with other test results from conventionally-fired locomotives. But the results so far are sufficiently encouraging to suggest that after 27 years the Victorian Railways may have found an economic means of utilising brown coal for locomotive purposes. Experiments with briquettes have been abandoned on account of the fire hazard, and H-class No. 220 will be returned to normal.

BOOK REVIEW

"THE WORLD'S RAILWAYS And How They Work"

(Odham's Press Limited)

Usually, when an author sets out to write all about everything, the result is a mass of wordage which conveys nothing. A notable exception is this fascinating book in which every kind of railway in all parts of the world is dealt with in an interesting and informative manner. An omission is the absence of any reference to the interurban railways — perhaps to English eyes, they appear to qualify rather as tramways!

The chapter on Australasian railways is somewhat lopsided — the Burnley (Melbourne) flyover receives considerable space, whereas similar but far larger installations in New South Wales, including the famous Flying Junctions outside Sydney Central, are not mentioned at all. The Sydney Harbour Bridge, which is far from being a railway project, is described in great detail.

All in all, however, the book is worthy of a place on the rail fan bookshelf. There are 320 pages, with over 250 illustrations — many of which are two-page spreads.

(Our copy from McGill's Newsagency, Melbourne — 13/9.)

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WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

QUEENSLAND RAILWAYS
Record Earnings — Annual Report

The Annual Report of the Queensland Railways Commissioner (Mr. T. E. Moloney) shows gross earnings for the year ended June 30 last at the record figure of £14,927,153, and working expenses amounting to £13,770,167, resulting in net profit on operations of £1,156,986 for the year. After payment of interest on capital, a deficit of £315,613 was shown. This was an improvement of £355,474 over the previous figures.

Percentage of expenditure to revenue was 92.25 per cent. or .63 better than for 1947-48. Gross revenue per train mile increased by 2/2 to 17/3¼, and operating expenditure per train mile rose by 1/11 to 15/11¼. The increase in working expenses of £3,431,029 over the previous year was largely accounted for by four increases in the basic wage, but stores and materials cost £425,623 more and coal £261,417 more than in 1947-48.

Passenger journeys totalling 32,491,023 earned £2,740,282 revenue. Of the total 25,903,223 were suburban passengers. Total passengers carried increased by 32 per cent. compared with 1938-39. Freight tonnage increased under almost all but minor headings, and amounted to 6,591,371 tons (inclusive of livestock), earning revenue totalling £11,018,974 for the year, an increase of £3,147,977. Total freight and livestock tonnage rose by 1,359,165 tons.

Coal supplies caused considerable operating difficulties, owing to the fact that the West Moreton and Collinsville fields produced insufficient for railway needs, which amounted to 697,362 tons for the year, which had to be hauled an average of 167 miles — 45 miles further than previously for use. For the first time since the North Coast Railway was opened throughout in 1923, coal had to be shipped from Brisbane to Townsville by sea because of the preponderance of north-bound traffic making freight cars unavailable.

The staff position is still serious; the railway industry is not popular with youthful recruits because of long hours, shift work, living away from home and other causes, despite the availability of rapid promotion in the service. Additional staff obtained have been barely sufficient to offset normal wastage. Technical staff shortage is acute, despite efforts made to obtain technicians from overseas. This is delaying the construction programme in the workshops, besides other developmental projects.

Train traffic mileage of 17,275,755 was the highest peace-time mileage ever run, and the volume of traffic is reflected in the gross ton-mileage of 4,118,000,000 — only 16 per cent. less than the wartime peak of 1943-44.

The locomotive and rolling stock position has continued to deteriorate because of failure of contractors to deliver equipment on order to schedule. Of 30 locomotives anticipated to be delivered during the year, only 13 were placed in service — six C17's from Walkers Ltd., four from Clyde Engineering Co., and three DD17 tank engines from Ipswich shops. The lag in deliveries has made the locomotive repair position worse than previously, with 30.06 per cent. of the total stock awaiting, or undergoing repairs at June 30 last as compared with 27.29 per cent. at June 30, 1948. Many locomotives now in traffic would, if replacements were available, be withdrawn from traffic and condemned.

At the end of the year under review, 143 locomotives were on order in Australia and overseas, as listed in the table below:—

Builder	Garratt	B18¼	C17	CC17	DD17	Total
Beyer Peacock & Co.	20	—	—	—	—	20
Walkers Ltd.	—	20	40	—	—	60
Clyde Engineering Co.	—	—	16	—	—	16
Vulcan Foundry Ltd.	—	20	—	—	—	20
Ipswich Workshops	—	—	—	18	9	27
TOTALS	20	40	56	18	9	143

Twenty-seven locomotives were repaired by outside contractors — Evans, Deakin & Co. and the Bundaberg Foundry Co. — during the year. Individual colour schemes for various locomotive classes have been decided upon, and new locomotives of class B18¼ will be painted hawthorn green; CC17 class, dark brown; and DD17 class, royal blue, trimmed with imperial carmine. The first three of twelve DD17 class on order have proved very satisfactory in service. The design, which was carried out by the Chief Mechanical Engineer's office at Ipswich, represents a radical change in many respects from previous Queensland Railways' practice, and many of the features will be incorporated in the new general purpose CC17 class 2-8-2 locomotives now being constructed. (For particulars, see elsewhere in this issue.—Ed.)

Six suburban passenger cars were delivered ex Commonwealth Engineering Co., leaving six of the first order and eighteen of the second order still outstanding. Ipswich shops delivered a "Sunshine" type dining car during the year, and made alterations to seven passenger cars and rebuilt one. Three cars used during the war for ambulance trains were re-converted to passenger use, and two brake vans were converted to mobile training cars for the Department of Public Instruction. Eight passenger cars were written off during the year. Contracts for eight first-class and 21 second-class all-steel saloon sitting cars were let to Commonwealth Engineering Co. These will be air-conditioned and have reclining, rotating seats for use on country services.

Ipswich shops have orders in hand for construction of 55 passenger cars and vans of various types, and tenders will shortly be called for a further 56 pas-

Western Australian Government Railways' new 3-car diesel-electric train "Boronia" (see description in last month's issue). (Official W.A.G.R. photo.)

senger train vehicles, including brake vans and baggage cars. These will include 14 first-class, 21 second-class and 7 composite first- and second-class sleeping cars, 7 brake vans and 7 baggage cars. Ipswich orders comprise 3 branch line sleeping cars, 4 first-class and 8 second-class sitting cars and 40 brake vans. The designing of the air-conditioned train for the Sunshine route is now progressing satisfactorily. (For description, see September issue.—Ed.).

The rail motor fleet is to be enlarged by the building of six twin-engined rail motor trains which have been ordered from Commonwealth Engineering Co. Each train will comprise two power cars, each with a Gardner 6L3 153 b.h.p. diesel engine with fluid coupling and Wilson-Drewry epicyclic pre-selective gearbox, and two trailer cars. They will be equipped for multiple-unit operation. Power cars will seat 55 passengers and composite trailer cars each 39, making the capacity of each four-car set 188, and each two-car unit 94. There will be lavatory accommodation and a baggage compartment for 4 tons in each trailer car. Ipswich shops are constructing two additional 102 b.h.p. railcar units and two trailer cars for existing units. Two cream trailers for railcar haulage were built during the year.

Two hundred and thirty-nine new freight cars were placed in traffic, of which 173 were ballast hopper cars constructed by Evans, Deakin & Co. Ipswich shops supplied 40 K cattle cars, 10 KKB cattle cars with brake van incorporated, and 16 CJF bogie louvre cars for fruit traffic. In addition, Ipswich shops converted 73 freight cars to different types, 113 were modified and 154 were condemned, leaving a net gain of 85 cars for the year. Contracts for construction of new freight cars are listed as under:—

Class and Description	Ipswich Shops	Evans Deakin	Metrop. Cammell	Commonwealth Engineering
IC 4-wheel cattle cars	20	—	—	—
LH 4-wheel sheep cars	30	—	—	—
K bogie cattle cars	45	—	—	—
— 4-wheel box cars	200	—	—	—
KKB 4-wheel box cars	200	—	—	—
CJF bogie louvre cars	22	—	—	—
Horse Boxes (bogie)	2	—	—	—
VJM 4-wheel hopper cars	—	200	—	—
FJS 4-wheel steel open cars	—	200	—	—
HVS bogie ore/concentrates	—	100	—	—
HJS bogie open cars	—	300	600	—
GVJM 4-wheel open/hopper cars	—	200	—	—
W bogie flat cars	—	200	—	—
Baggage cars	—	55	—	—
Tank cars	—	25	—	—
CMI bogie refrigerator cars	—	—	—	20
TOTALS	324	1,280	600	20
TOTAL		2,224		

In addition to the above, tenders are being sought for construction of 200 FIS 1,100 VIM and 100 BH (bogie steel coal hopper cars).

The duplication of the suburban section from Yeerongpilly to Kuraby has been commenced, and a new station opened at Kuraby. For duplication works and ordinary renewals and maintenance 11,000 tons of 60-lb. rail and 9,000 tons of 80-lb. rail, spikes, fishplates and fastenings have been ordered from overseas, at prices greatly in excess of local supplies.

Field survey work for the duplication of the Newmarket-Mitchelton suburban line has been completed, and working plans are now being drawn. Surveys are in progress for regrading the main North Coast line between Avondale and Mount Larcomb, north of Bundaberg, as well as the suburban quadruplication between Corinda and Northgate. Good progress has been made with the rearrangement of Toowoomba yard, and tenders have been called for erection of a modern reinforced concrete station and office building at Cairns. Plans are being drawn for a new station building at Rockhampton.

Of the bridge renewal programme initiated since the war, the new high-level bridge over the Elliott River (Bowen-Townsville section) was opened for traffic in April last, and test bores have been made to test for foundations of the new bridge over the Haughton River, at Giru, 29 miles from Townsville. Strengthening of bridges throughout the system to carry heavier axle loadings is being undertaken. Fabrication of the superstructure for the new Albert River bridge (South Coast line) is proceeding and tenders will be called for a new bridge over the Logan River. As soon as steel supplies are available, a further two months' work will complete the strengthening of all existing bridges from Roma to Westgate (13 miles beyond Charleville) enabling heavier locomotives to be employed.

Tenders have been called for the earthworks, drainage, etc., of a deviation of 6 miles 44½ chains between Moongan and Moonmera on the Mount Morgan line. (See February, 1949 issue.—Ed.) Tracklaying and ballasting will be carried out by the Department. A start has been made on the regrading of the Blair Athol branch between Clermont and Emerald to increase the maximum ruling grade load for coal trains from Blair Athol field. Development of the Peak Downs sorghum-growing project of the Queensland-British Food Corporation has also resulted in increased traffic on this line. The necessity to haul increasing quantities of coal from both Blair Athol and Callide fields to Brisbane has had an important bearing on the decisions to expedite these regradings.

Despite the difficulties of material supply and manpower, Departmental housing is being increased and improved wherever possible. For accommodation of employees forced to live away from home, 100 huts designed to accommodate two men are being constructed of bondwood with timber floors. These will be installed at locations in the West and wet areas of the North. Floor boards are being provided for tents, where this type of accommodation exists, together with tables, wire stretchers, mattresses and cooking utensils. Six old passenger cars were converted to camp cars to accommodate six, together with workrooms, living space, cooking and washing facilities. These will be shared by Central and Northern Divisions.

Further investigations are being made into the question of electrification of the Brisbane suburban lines, but duplication works, signalling improvements, etc., are all designed with ultimate electrification in view. (The Minister for Transport (Mr. Duggan) said in Brisbane last month that "unless unforeseen hitches occurred" electrification would be proceeded with within twelve months.—Ed.) Both the Chief Mechanical Engineer and his assistant are at present overseas on investigatory missions, including enquiries about electrification.

Commonwealth Waives Import Duty on Locos.

Because of the inability of Australian manufacturers to supply locomotives, which have subsequently been ordered overseas — almost 400 on order at the end of September — the Commonwealth Government has undertaken to waive collection of import duty and primage, which will save the various railway administrations large sums. Some idea of the cost of locomotives on order from overseas for Australian lines are: Twenty Beyer-Garratts for Q.R., £1,428,790; average £71,439 each landed; twenty-five Beyer-Garratts for N.S.W.R.; average £67,800 each; fifty N-class for V.R.; average each £32,252, and a similar number of R-class, £40,613 each.

The saving in duty, etc., on the importation of ten diesel-electric shunting locomotives for V.R. will amount to almost £40,000. Importation of locomotives, rolling stock and other railway equipment from overseas will cost Australian railways vastly more than similar equipment from local sources, if it were available. For instance, 20 B18¼ class engines for the Queensland Railways will cost an average of £33,884 each, compared with local price of £25,700.

Similarly, with freight cars, rails, fastenings, structural and other steel, the

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railways are being heavily penalised because of the inability of Australian suppliers to meet the demand. The cumulative effect upon the national economy can only be to increase costs and slow down still further the vast renewals and expansion programmes urgently preoccupying railway administrations and Governments alike.

New Dual-Purpose Locomotives For Queensland

Particulars of the dimensions and equipment of the new Queensland Railways CC17-class 2-8-2 dual service locomotives are now available. The first of 18 on order from Ipswich shops are now under construction.

The design is based on a compromise between that of the standard C17 class and the wartime American "austerity" locomotives (Q.R. class AC16), which proved to have marked advantages in many respects over standard Queensland design. With two outside cylinders 17 in. dia. x 22 in. stroke and 175 p.s.i. boiler pressure, the new 2-8-2's will develop a tractive effort of 21,000 lb. at 85 per cent. boiler pressure. The driving wheels are 45-in. diam., and leading and trailing truck wheels 26-in. and 28-in. respectively. The factor of adhesion is 3.85. Roadworthy weight of engine is calculated as 49.0 tons, and the standard self-trimming bogie tender (capacity 3,050 gallons and 7.35 tons heaped) of the type used for existing B18¼ and C17 engines, weighs 36.30 tons, making the total roadworthy weight 85.30 tons.

The tapered boiler has a minimum diam. (internal) of 53-in. and is 15-ft. 9½-in. between tubeplates. It carries 89 x 2 in. o.d. steel tubes and 18 x 5-in. o.d. diam. flue tubes, providing evaporative heating surfaces of 735 s/ft. and 372 s/ft., respectively. The firebox has two 3-in. o.d. arch tubes which contribute 7 s/ft. to the total firebox heating surface of 101 s/ft. Thus the total evaporative heating surface is 1,208 s/ft. The 18 superheater elements contribute 243 s/ft. making the combined heating surface 1,451 s/ft. The grate area is 25 s/ft. Overall length of engine and tender is 57 ft. 7⅜ in. and height from rail level to top of stack 11 ft. 9¼ in. Maximum width over the cab is 8 ft. 5 in.

The piston valves are actuated by Walschaerts valve gear, lever controlled from the standard Queensland right-hand driving position. The headlight is located at the centre of the smokebox door, similarly to AC16 and DD17 engines, with the turbo-generator mounted on top of the smokebox in front of the stack, which is of similar pattern to that on the DD17, as is the boiler-mounted sandbox. Other features in common with the DD17 design, include a Waugh type firegrate, master mechanic's (self-cleaning) front end, mechanical lubrication of cylinders and valves, chime whistle, asbestos mattress boiler lagging, muffled "pop" safety valves, and blow down cocks, etc. The mainframes will be identical to those of the AC16 engines, *i.e.*, bar type, and the cab will be of all-metal construction, of similar design to the latest C17 and B18¼ class cabs, with only the firebox backhead actually inside the cab, making for more comfortable conditions for enginemen. All axles will run on SKF self-aligning roller bearings, as will all motion parts.

According to a Brisbane correspondent, "this is a very pleasing looking design of locomotive, and looks every inch a good one."

Out of the past is this view of L class 2-4-0 saddle tank, No. 22 of the Victorian Railways, with contemporary rolling stock. Reader L. T. Lalor, of Sea Lake, Vic., did not give the date or location; we are inclined to favour Broadmeadows. Perhaps Mr. C. D. Gavan Duffy could oblige?

NEWS IN BRIEF

Victorian Railways and South Australian Railways have announced names for new all-steel air-conditioned roomette and two-berth sleeping cars being constructed at Islington, S.A., for the "Overland" service, which are jointly-owned. They are native names, Allambi (quiet place); Tantini (sleeping); Mururi (to sleep); Chalaki (evening); Weroni (quiet); and Dorai (to sleep). The new cars are scheduled to go into service before Christmas. Four will be roomette cars, and two luxury double-berths with shower compartments and combolet unit lavatories to each compartment.

Engineer Becomes New V.R. Commissioner

General surprise was evinced in Victorian Railway circles at the selection of Mr. Oscar Meyer, O.B.E., to fill the third Commissionership which will become vacant on the retirement of the present Chairman, Mr. N. C. Harris, next January. The appointment is for five-seven years at £2,250 a year. Mr. Meyer will be aged 40 next February and is now Director of Mechanical Engineering in the Railway Standardisation Division of the Commonwealth Department of Transport.

His early training and experience were gained with the New South Wales Department of Railways. Mr. Meyer served in the A.I.F. from 1940 in the Middle East with the 2/5th Field Company Engineers and later became Deputy-Director of Works and Stores at Morotai (for which he was awarded the O.B.E.). When he left the Army in 1946 to become Assistant Director of Civil Engineering in the Standardisation Division, he was Director of R.A.E., at G.H.Q. He was twice mentioned in despatches.

Mr. Meyer has attended overseas conferences as a Commonwealth technical adviser, and since the war has spent six months in Europe, Britain and the United States studying railway developments. Last year he was sent abroad on a special mission concerning the application of diesel-electric traction to Australian railways. Mr. Meyer is a specialist who will bring a new approach to technical problems of the Victorian Railways.

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ELECTRIC TRACTION

Mr. Bell Retires

On 30th September, Mr. Hector Hercules Bell retired from the Chairmanship of the Melbourne and Metropolitan Tramways Board. He was succeeded by Mr. J. W. Risson.

Described by one newspaper correspondent as "rugged, tough, and uncompromising," Mr. Bell was these things only to those who attempted to bribe him or browbeat him. He was equally contemptuous of both. With the exception of the hotheads, his men admired him, and all respected his integrity and straight-dealing. During his long term of office, he had one ambition — to provide Melbourne with the most modern and efficient transport service possible. Many have disagreed with his policy, and certain newspapers have attacked him constantly, never hesitating to distort his words in the process. Mr. Bell's reaction to these attacks and to the political and financial pressure which has beset him from time to time has earned him the soubriquet of "Tough Man of the Trams." He has been accused of being one-eyed; how many realise that it was Mr. Bell who insisted, against opposition, on a thorough trial of modern buses in Bourke Street, much as he would have preferred to see electric trams in their place?

"From Potato Digger to Tram King" ran another headline, and, though both Mr. Bell's grandfather and father were transport men, it was as a potato digger that he first worked. Destined for a railway job, he ran away to begin a life of hard work. While still a youth, he set up as a contractor and, after two failures, settled down to over thirty years in this capacity. The Perth Causeway, a stretch of Point Nepean Road, two reservoirs — these stand as monuments to his industry. Mr. Bell is proud of the fact that he was his own engineer in these projects. In addition, he found time to be a member of the Board of Works, for 21 years, to serve on the Richmond Town Council for 22 years, including chairmanship of several committees. In 1916, he became a member of the Hawthorn Tramways Trust; later he was vice-chairman. On the formation of the Melbourne and Metropolitan Tramways Board, Mr. Bell became a member and vice-chairman.

In 1934, he succeeded to the Chairmanship, which involved giving up his contracting business and all other appointments. Since that time, Mr. Bell has devoted himself to his job, working on Saturdays, keeping in touch with affairs from his home outside office hours; his grasp of detail is amazing — to a subordinate, sometimes alarming! His retirement was not of his own seeking, and Mr. Bell hopes to continue in some form of public service. Whatever he does, he will do it thoroughly.

Accompanied by the inevitable pipe, Mr. Bell goes through some papers with Mr. Risson. (Herald-Sun Feature Service.)

Mr. Risson

Mr. Risson is a worthy successor. Formerly Assistant Manager of the Brisbane City Council tramways, he was liked and respected by all sections of that organisation. During the war, he served in the Army, reaching the rank of Brigadier. His term of office as Chairman will no doubt be marked with equal distinction.

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

BRISBANE, Qld.:—

Recent extensions opened are to Ennoggera and Belmont. Both are about one mile long. The Dutton Park route has been duplicated to the terminus. The latest car on the road is No. 500 which made its debut late in September. It is the 101st of the streamlined cars in service.

SYDNEY, N.S.W.:—

The new Commissioner, Mr. R. Winsor, has stated that the construction of 250 new corridor trams has begun, and the first 100 will be delivered by the end of 1950. The Commissioner says that the present surcharge cannot be lifted from the fares until fare evasion by the public ceases. The evasion is estimated at £500,000 per annum. He has called for co-operation of the staff and the public to enable the surcharge to be lifted by Christmas.

MELBOURNE, Victoria:—

The former Chairman, Mr. H. H. Bell, Snr., is being retained as a consultant for three months to assist the new Chairman, Mr. Risson. Track laying on the Latrobe Street route, proceeding east, has reached Russell Street corner.

"C" Class maximum-traction car No. 27 (built by the P. & M.T.T. in 1911) has been withdrawn from storage and the body has been sold. There are now only 10 of these cars left, all being out of use and in storage. The sole remaining brown-and-cream car, No. 190 (G class), is now being painted in the standard green and cream. This car has outlived the colour change-over by at least 15 years.

MELBOURNE, V.R. Tramways:—

Following a municipal deputation, the

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Minister for Transport has stated that the future of the two routes is now being considered, including the plan to rehabilitate and link the lines under M. & M.T.B. Control. Mr. H. H. Bell, Snr., has stated that the routes would be better served by trolley buses because of the cost of conversion, rehabilitation and the allegedly small off-peak traffic.

It is understood that the matter will not be cleared up until the proposed all-inclusive Transport Authority is constituted soon, and this will survey the matter, as well as the future of the three S.E.C. tramways in the country.

BALLARAT, Victoria:—

The Report by Mr. H. H. Bell, Jnr., on the tramway service recommends that trolley buses be installed instead of rehabilitating the trams. He has claimed that tramway improvements will cost £500,000, whereas a modern trolley-bus service would cost £198,000. The reasons for the trolley buses include the suitability of the topography, the needed replanning of the routes, the cheaper operating costs, and higher speeds. Alterations in fares are suggested. Mr. Bell congratulated the management on the efficiency of the present tram service, but claimed it did not serve new areas now developing.

The Report has already met with stiff opposition, and Councillors have serious doubts on the claims of the trolley buses. A three-city conference of Ballarat, Geelong and Bendigo may be called soon to discuss the Bell Reports on the respective systems. The Tramway Union has decided already in favour of the retention of the trams in the three cities.

WANGANUI, N.Z.:—

Despite higher fares and shorter sections, the system ran at a loss of £1,876 in the last financial year, and passenger traffic has slumped to 1,912,064. It is understood that the services will close by the end of the year, and buses run by Greyhound Ltd. will take over. So serious is the decay of the service that 18 derailments have occurred this year already, and 15 chains of the route to East has been closed because of track degeneration.

NEW PLYMOUTH, N.Z.:—

The planned trolley bus conversion of the Westown route has been stopped and trams will continue for another five years at least. Efforts are being made to dispose of the partly completed four trolley buses. The reason is because the cost of rehabilitation of a five-year term is quite small compared with the cost of the trolley buses. This reverses a recommendation by an outside engineer for the closure of the tram service.

AUCKLAND, N.Z.:—

On 23/9/49, the tram service to Herne Bay ceased and the new trolley buses took over. The tracks will be pulled up between Three Lamps and the terminus, while the College Hill section will be retained for a rush-hour service to Ponsonby. The short length of connecting track in Halsey Street has been made inoperative. It is on the success or otherwise of this conversion, that the fate of the tramway service depends.

WELLINGTON, N.Z.:—

The Chairman of the Council's Tramway Committee has stated that no more trams will be built. This is due, it is claimed, to the inability to maintain the tracks and cars during the war-time period.

CHRISTCHURCH, N.Z.:—

After considerable acrimonious discussion, the new Tramway Board has decided on a new plan of modernisation, and will ask for a loan of £532,000 to buy 40 trolley buses, and erect buildings for the conversion of the New Brighton and Sumner tramway routes. It is claimed that the new vehicles will have a life of 17 years, and will cost £248 000. 14 miles of overhead will be purchased as well as a number of rectifiers for many new sub-stations. A minority wanted all trams replaced by omnibuses.

Changes in the fares were approved from the 26/7/49, and will include the abolition of "trip-cars" on all routes. Fares on Race-Specials will be raised, whilst availability of certain seaside and hillside return tickets will be altered.

LATE NEWS.

A further batch of SW6 cars, Nos. 943-947, were placed in service on 19th and 20th October, on the M. & M.T.B. system in Melbourne.

FOR YOUR TRAMWAY NOTEBOOK

Electric Tramways in Australia

Recent Statistics

As at June 30	Miles	Cost £'000	Gross Rev. £'000	Wkg. Exp. £'000	Net Rev. £'000	Passengers '000
1939	586	26,275	7,649	6,089	1,560	695,476
1940*	563	26,205	7,631	6,019	1,612	692,000
1942	587	26,289	9,370	6,916	2,454	873,657
1943	591	26,533	10,507	7,746	2,761	990,482
1944	602	26.888	11,238	8,372	2.866	1,083.212
1945	603	27,156	11,265	8,420	**2,845**	**1,069,716**
1946†	606	27,428	11,313	8,858	2,455	1,049,254
1947†	614	27,067	11,210	9,495	1,715	986,550

* Manly (Sydney) lines scrapped.
† Not including Harbour Bridge section (Sydney).

For over fifty years an essential feature of the Melbourne scene, cable trams are now but a nostalgic memory revived, now and then, by the sight of one of the diminutive cars in some back yard or holiday camp. Our picture, by courtesy of "Truck and Bus Transportation," shows trailer No. 509 en route for pastures new.

THE TROLLEY-BUS STOP

NEW AUCKLAND ROUTE

At a ceremony marking the inauguration of the Herne Bay trolley bus service, the Chairman of the Auckland Transport Board, Mr. H. A. Anderson, said that the buses cost £6,500, and the costing of converting the entire route, including vehicles, was £110,000. On this basis, if the whole tramway system were converted, the cost would be £2,500,000.

The 15 buses were imported fully assembled. A further 40 buses, when assembled, would be placed in service on the Ponsonby and Richmond Road runs.

The trolley buses started running on Saturday, 24th September.

WELLINGTON PLANS

The 38 new trolley buses will be used on the Wadestown, Karori, and Northland routes. The Wadestown service has already been closed, being run temporarily by omnibuses.

AUCKLAND TRAMWAYS

By G. C. Stewart.

These notes, which are incomplete, are intended rather to supply background material than give an overall view of the tramways of Auckland. In a relatively large system such as this, there will have to be much enquiry before all aspects are covered adequately.

All the 44 miles of route tramway in Auckland are laid on sleepers, but there is no reserved track. This is just one of the oddities in a transport service that offers many interesting points to tramway enthusiasts. The system is run by the Auckland Transport Board. It is standard gauge.

During the war, the standard of maintenance fell, and, for a variety of reasons, has not resumed its former high level. Despite this misfortune, there is still much left of a fine legacy. With exceptions near a few termini, all routes are now double-track throughout, and, what is as important, the roads are generally wide enough to accommodate the two tracks. Point turners are installed at all strategic points.

In the centre and at the northern end of Queen Street are 12-way junctions, *i.e.*, offering a choice of three routes from any one of four directions, and these are controlled from cabins.

There are many passenger islands, called here safety zones. All cars are fitted with air brakes. The trams on regular runs are relatively fast, and take full advantage of the numerous stiff downgrades on some of which they are reputed to reach 35 miles per hour, and more. Many of the cars can touch 25 m.p.h. on the level. The trams, which can carry over 100 at a pinch, move the crowds very efficiently, and still give a relatively comfortable ride. From the tram fan's view, the classes of cars offer much interesting enquiry.

The fares, which have never been altered, so far as I know, are 2d. for the first section and 1d. for every additional one, with a maximum single fare of 6d. When the railway station was removed from behind Queen Street to its present site, 1d. fare was instituted between Customs Street East and the railway station. It still persists.

One of the features that contributed towards the system's excellence may be the deciding factor of its doom. This is the trackwork. Originally, the rails were laid on concrete "walls" after the fashion of the time. When the Auckland City Council took the system over from the Auckland Electric Tramways Company, the authorities decided to try out a new trackwork formation. This was scoria — lava slag — as a base to face, in addition to the underground sections.

HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

MELBOURNE NOTES

New trailer cars, Nos. 437-8T, were placed in service during the first week of October. Cars 439T and 102G are at Jolimont shops, and should be in traffic shortly. At Newport shops, cars 440T and 103G are nearing completion.

Altona Branch

The unusual combination of rolling stock on the Newport-Altona shuttle service has been replaced by yet another. Previously, this line was provided with an ABM, AM, and D, all swing-door stock. The two motor coaches worked the slack-hour service, while the three cars were in use during the peak.

Now a 4-car, swing-door train is in use all day, and is comprised of two 2-car sets, each having the motor coach on the Up end. This gives a driving trailer leading on the Down trip to Altona.

In addition, this train runs the service between Newport and Newport Shops for the change of shifts at 3.00 p.m.

SYDNEY NEWS

Eastern Suburbs Railway

Tunnelling under the city from the Domain has been commenced for the new Eastern Suburbs railway. Vertical shafts are being sunk at a number of places as commencing points for other tunnels. The line will be partly surface. in addition to the underground sections.

New Cars

Construction has commenced at Tulloch's Phoenix Iron Works, Rhodes, of the 165 new all steel motors and trailers ordered some time ago.

ADELAIDE ELECTRIFICATION

In connection with the planned electrification of the Adelaide suburban lines, it has been announced that, on the Belair line, there will be one trailer to each motor coach, and, on other lines, not more than two trailers to each motor coach. Acceleration will be at the rate of 1¼ m.p.h. per second, and deceleration at 2 m.p.h. per second. Total single track mileage, including sidings, of track to be electrified is 108 miles.

BRISBANE PLANS

Although final approval has yet to be given to the Brisbane suburban electrification plan, duplications and other works now in progress are designed to allow for ultimate electrification. Two departmental officers are studying electrification problems overseas.

MINE LOCOMOTIVES

It is regretted that lack of space compels us to hold over the description of the electro-pneumatic control system for the A.I. & S. mine locomotives.

Last tram for Herne Bay about to leave the City at 12.12 a.m. The Assistant Manager of the Auckland Transport Board (Mr. H. H. Morgan) is standing second from left. Three A.E.T.A. members made the trip, including the Auckland representative, Mr. D. Fallwell, extreme right; Mr. G. Cobham, second from right; and Mr. G. C. Stewart, third from left. Mr. Stewart's father, Mr. W. W. Stewart, was the photographer. The line carried over 100,000,000 passengers since its inception in 1903.

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A.E.T.A. NOTES

MELBOURNE BRANCH

October Meeting

The speaker at the October meeting was to have been Mr. W. R. Pollock, M.I.Mar.E. (London), M.V.I.E. Although Mr. Pollock was unable to be present, he arranged for our Recorder, Mr. N. H. Gipps, to read portion of his address on Melbourne's cable tramway system. The second part will be delivered by Mr. Pollock in person at our next meeting on Friday, 4th November.

Mr. Gipps prefaced the speaker's notes with a brief history of cable tramways generally, and, on completion of the talk, answered many and varied questions from those present. Among interesting statistics given were those of the Melbourne cable tramways at their greatest extent — 45 route miles, 600 two-car sets (including 59 bogie trailers), 11 engine houses, and 16 car sheds.

Cup Day

A party of members will visit Preston Workshops on Cup Day (1st November). Definite arrangements could not be made in time for earlier announcement.

A.E.T.A. Hike

An afternoon hike will be held on Saturday, 19th November, at Cranbourne (Gippsland line). All members and their friends should come if possible. Travel by the 1.16 p.m. train from Flinders Street (electric — change at Dandenong), and bring evening meal; returning by the 7.36 p.m. train (from Cranbourne). Although opportunity will be taken to inspect disused private railways in the district, the principal idea of the outing is to enable members, particularly those who have joined recently, to get to know each other, and to discuss their interests at leisure.

Fourth M. & M.T.B. Tour

Preliminary arrangements are in hand for another of our popular Special Car tours over the M. & M.T.B. lines. The date and full details will be announced as soon as possible. If possible, the P.C.C. car will be used; in default, a Y1 class car.

Geelong Committee

The scope of the former Geelong Committee has been extended to cover all three provincial cities, and suitable action is being taken as necessary. Some attention is being given to Launceston also.

SYDNEY BRANCH

Annual Meeting

We understand that the Annual Meeting of the Sydney Branch resulted in the return of all previous office-bearers — a fine tribute to their work during the past year.

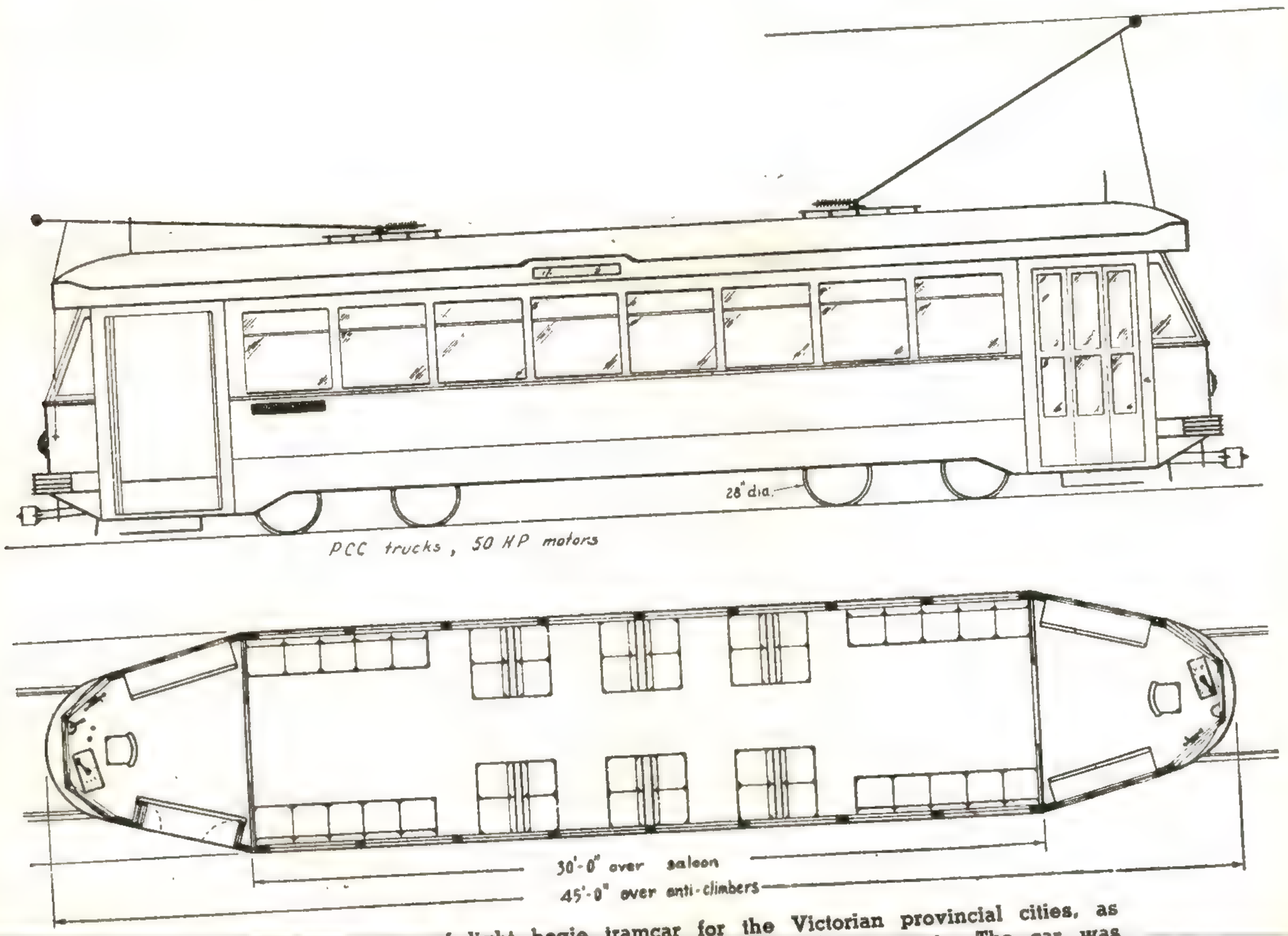
(Continued from page 21

facilitate drainage, and wooden sleepers for resilience.

This arrangement proved so successful that it was applied to the whole system. Unfortunately, of recent years, the scoria-sleeper foundation has worn out, and so have the rails.

It may well be then, that this factor has influenced the Board considerably in deciding to convert three tram routes to trolley-bus traction "to see how it goes."

Already there is a trolley-bus system operating in Auckland, and this is another curiosity. The story goes back to shortly before the war, when Farmer's, the Dominion's largest department store, arranged with the Board for the introduction of a trolley bus service for experimental purposes.



Suggested type of light bogie tramcar for the Victorian provincial cities, as described in the A.E.T.A. report on Geelong passenger transport. The car was designed by members of the A.E.T.A. (drawing by Mr. D. C. Wishart).

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Letters to the Editor

TRAIN TIMING

The Editor,
Railways in Australia,
Dear Sir,

I read with a great deal of interest Mr. Hogg's remarks in the September issue on "Train Timing." As a keen enthusiast on this aspect of railway working, I should be only too pleased to assist in any way possible to promote this fascinating study.

Since May, 1942, I have recorded all my trips exceeding 50 miles, including several involving two consecutive days and nights of travel. Perhaps the most exciting of these journeys was in 1942 on the Up "Unofficial Caves" ex-Mt. Victoria to Sydney, when the 19.83 miles passing Penrith, along the speedway to Parramatta, arrive, in 20 minutes exactly—an average of 59.47 m.p.h. No. 3660 took the credit with the Caves set, No. 108, and two "box" cars—10 cars, 262 tons.

Wishing the magazine every success.

Yours, etc.,
I. K. WINNEY.

Chatswood, N.S.W.

The Editor,
Railways in Australia,
Dear Sir,

I read with deep interest Mr. Hogg's letter in your September number on "Train Timing," but have hesitated to write, realizing your space is very limited, and feeling that anything I might say would be of little real service. The ordinary work-a-day railway man seems to consider train timers very often as akin to the little boys who jot down the numbers of motor cars they see. But it seems to me that the running of trains is the very essence of railroading and if this be conceded, the recording of such running seems a very natural concomitant, particularly if details be given as completely as possible of surrounding and affecting conditions.

The records may be in at least two varying forms—one giving times, minutes and seconds, of all starts and stops and passings. The other is to set down the chief times, etc., with notes of special features ("speed up Warrenheip Bank 37 miles an hour"; "Engine slipping badly"; "very strong side wind"; "time m.p. 31 to m.p. 39—8 min., 13 sec.") This latter form makes a much more living appeal to the reader especially if he knows the track.

One of the greatest experts in "logging" trains was the late Mr. Haydn Baggs, a Foundation Member of the Railways Historical Society. I have in my library 14 beautifully leather-bound volumes of runs noted by him between 1873 and 1936 in England, America, and Australia, totalling almost 4,000 trips. His work in timing and in the perfection of his writing it 2 can only be faintly comprehended w'tho t the inspection of his journals and unfortunately this is only possible to a s ll L t always welcome company of visitors to my collection.

It must be conceded that Mr. Baggs went to unnecessary extremes, entering times not only in minutes and seconds, but in decimals of a second, and extreme also was his persisting right up to the end of his life at about 82 years of age, in recording an all-night run, for instance, through from Adelaide to Ararat. He was held by those who were privileged to know him as the true "Dean of the Faculty."

Yours faithfully,
JAS. C. M. ROLLAND.

Camberwell, Vic.

OLD QUEENSLAND LOCO.

The Editor,
Railways in Australia,
Dear Sir,

Reference picture of old Queensland train ("R. in A.", 8/49):

The caption is entirely erroneous, as the loco. featured was never No. 1, nor was it No. 13, but No. 3. This engine (Neilson & Co., No. 1214 of 1866) commenced work at Rockhampton in 1867 as

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

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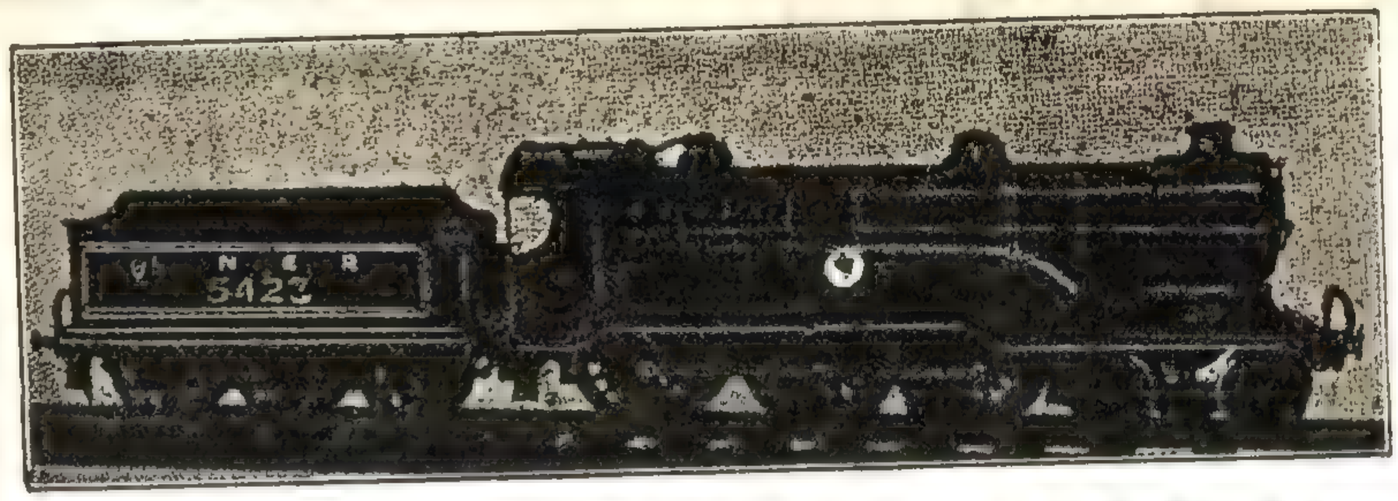

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Our Fan Mail

R. T. McDUFF, Warragul, Vic.—Thanks for letter; info. passed on to news editor. Duplication should make life easier!

J. W. SIMPSON, Hornsby, N.S.W.—Your letter passed on to Question Box editor, as was your previous note. No immediate prospect of diesels on main line expresses here.

R. KEAY, Bayswater, W.A.—Publicity in W.A.G.R.I. magazine arranged recently; thanks for suggestion.

T. DAVIES, West Ryde, N.S.W.—News item passed on to Tramway News editor; thanks for sending.

AETA HIKE — 19th NOV.
See page 22

Great Northern Railway (as the Central Division was then known) No. 3. With the change of name to Central Railway in 1876, it became Central No. 3, and in 1886 this same engine was transferred to the Southern & Western Railway as 4th No. 3. No. 3 was sent to the Bowen Railway about 1903, returned to the S. & W. Division in 1913, withdrawn from traffic in 1914, and was exhibited in Brisbane in 1915. In 1935, it was reconditioned for the 70th Anniversary of the Q.G.R. (when the picture was taken), and afterwards placed on permanent exhibition at Countess Street.

According to Mr. J. B. Rees, a retired Q.G.R. Loco. Engineer, this engine (whilst bearing the maker's number, 1214), is actually the old No. 8 (Neilson's No. 1244 of 1866), bought from Peto Brassey & Betts, railway contractors in 1867 and allotted S. & W. Railway No. 8. The confusion with No. 13 seems to have arisen from the fact that No. 13 was used to supply steam for the electric light plant at Roma St. in 1896. Considerable confusion still exists as to which of the early Q.G.R. locomotives of the A-10 class bore which builder's number.

Yours, etc.,
E. LINDSAY.

Toowong, Qld.

(The caption was based upon information supplied with the photo., and it is regretted that there should have been an error. It was not intended to imply that the engine shown was ever No. 1, simply that it "deputised" for the original in the celebrations.—Ed.)

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

Mr. R. T. SLOGGETT, Balwyn, Vic., asks why it is that when a Y class engine (Victorian Railways) double-heads with an electric loco., the Y class loco. must be in front, but in all other cases, the steam loco. is behind the electric loco.?

ANSWER: It is understood that experience showed the drawgear on Y class locos. to be unequal to the strains imposed in working as second engine to an electric loco., and thus taking the strain of a full double header load.

Mr. H. J. WRIGHT, Ashfield, N.S.W., asks what S.A.R. locomotives normally work the Broken Hill Express on the 3 ft. 6 in. gauge section? Does narrow gauge loco. No. 251 belong to the Rx class?

ANSWER: The Express is normally worked by T class 4-8-0 locomotives, to which class No. 251 belongs. The Rx class runs on 5 ft. 3 in. gauge only.

Mr. A. W. MOLONY, Ganmain, N.S.W., asks a number of questions: (1) What was the maximum speed attained by the C38 class loco under test? What was the train load? (2) What effect has the installation of improved valves had on the maximum H.P. output of the 36 class loco?

ANSWERS: (1) It is understood that there were no definite speed tests, other than for the purpose of testing tablet exchanges, and on the Newcastle Express in February, 1943, with 288 tons, but no top speed has been disclosed. However, with loads between 310 and 320 tons, 38's have been checked unofficially at 76 and 79 m.p.h. (2) Trick-ported valves have permitted freer disposal of exhaust steam and reduced back pressure in the cylinders. The increase in maximum developed cylinder horse-power from this innovation was between 10 and 15 per cent.

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Railways in Australia

and

A.R.L.H.S. BULLETIN

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VOLUME TWO, NUMBER 12 — DECEMBER, 1949

A Merry Xmas and a Happy New Year to all our readers

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DIESEL MINE LOCOMOTIVES

II*: Electro-pneumatic Controls

Power for the electro-pneumatic controls is supplied at 24 v. d.c. from a Stone's "Tonum" 750 w. generator with voltage regulator and driven by V belts from the diesel engine. In parallel are two 12 v. lead acid type batteries connected in series with each other, each with 221 amp. hour rating when discharged in ten hours.

D.c. power is used for starting the diesel, controlling the gear box, sanding, supervision of oil pressure and reverse gear, and for "deadman's handle" emergency braking. In addition, a small tachometer generator supplies a.c. for engine speed remote indication.

Control Equipment.

Installed in the cabin (see illustration) are the following:—**Control Panel and Instrument Board** (incorporating starter switch, engine speed indicators, battery ammeter, oil pressure, indicating light, and all light switches): **Generator Voltage Regulator** (carbon pile type): **Gear Change Controller** (consisting of a camshaft switch with separate manual levers for change-speed and reverse control and embodying a master control switch in the base of the controller. The key may be removed to prevent interference): **Electro-Pneumatic Sanders; Dead-man's Throttle Control Handle; Starter Motors** (two 24 v. motors for starting the diesel engine. The main contactor is so arranged as to close only when motor pinions have meshed with the flywheel teeth): **Magnet Valves** (for controlling the gear box, reverse gear, sanding gear, and deadman's emergency. They admit air to the various operating cylinders, and are energized by the gear-change controller, deadman's contact, or Sander push-buttons).

Tandem Operation (M.U.).

Multi-way jumper cables can be plugged into sockets at either end of each locomotive, enabling corresponding magnet valves of the second locomotive to be energised when working m.u. Other leads are provided for engine speed indication and indicator lights for oil pressure and reverse gear.

Other Features.

Among the many special features is a detector switch on the gear box which enables any failure of the reverse gear mechanism to be detected before damage can result.

(Concluded)

* Part I appeared in October, 1949.

WATTLE PARK

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IMPORTANT!

PRICE INCREASE

As from the January issue the retail price of this magazine will be increased to 1/3 per copy. At the same time, annual subscription rates will be increased slightly to 12/6 (10/- stg.). No change will be made in rates for dollar countries.

Continually increasing costs have made this rise inevitable, particularly in the case of retail sales of which we receive little more than half the purchase price.

WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

MORE TRACK DUPLICATION

New South Wales Railways

Duplication of the main Northern line between Branxton and Singleton has been commenced. Originally the Department planned to lay an additional single line with reclaimed rails to give, in effect, a "fast" and a "slow" line for two-directional working. Special provision was to have been made for crossing trains from "slow" to "fast" tracks and vice versa, in both directions. These plans have been scrapped.

With supplies of new heavy steel rail assured by orders on French firms, the plans have been revised to provide for immediate full duplication, with automatic colour-light signaling between Branxton and Muswellbrook, approximately 45 miles. Each section will be opened as completed.

In connection with the reorganisation of the signalling, new down and up refuge sidings giving a minimum length of 1,800 feet in the clear will be provided at suitable locations, not yet finally determined, in the vicinity of Belford and Whittingham. They will be remote controlled from the nearest signal-box in each case.

Plans for the reorganisation of Singleton yard include provision of two through roads for down and up working independently of the passenger tracks serving a large island platform, arranged somewhat similarly to that at Dungog.

Beyond Singleton there will be a complete deviation of the line to eliminate the existing 1 in 40 grade against down trains to Padulla. This will be designed to obviate the use of helper engines at present required for northbound trains. Temporarily, gauntletted tracks will be provided over the Hunter River bridge, near Singleton, arranged similarly to the Como bridge on the Illawarra line, near Sydney. This duplication and the accompanying signalling improvements have been made urgently necessary by the development by the Joint Coal Board of new open cut workings on the Muswellbrook field. The present facilities have been working beyond saturation point for several years past.

WESTERN LINE

Quadruplication of the main West (already in progress between Lidcombe and Granville and from Seven Hills to Blacktown, including a flying junction for the Richmond Branch) is to be extended immediately to Doonside, with provision of down and up refuge loops and signalling improvements at other locations, in order to handle the expanding coal production from the Western field.

BLUE MOUNTAINS

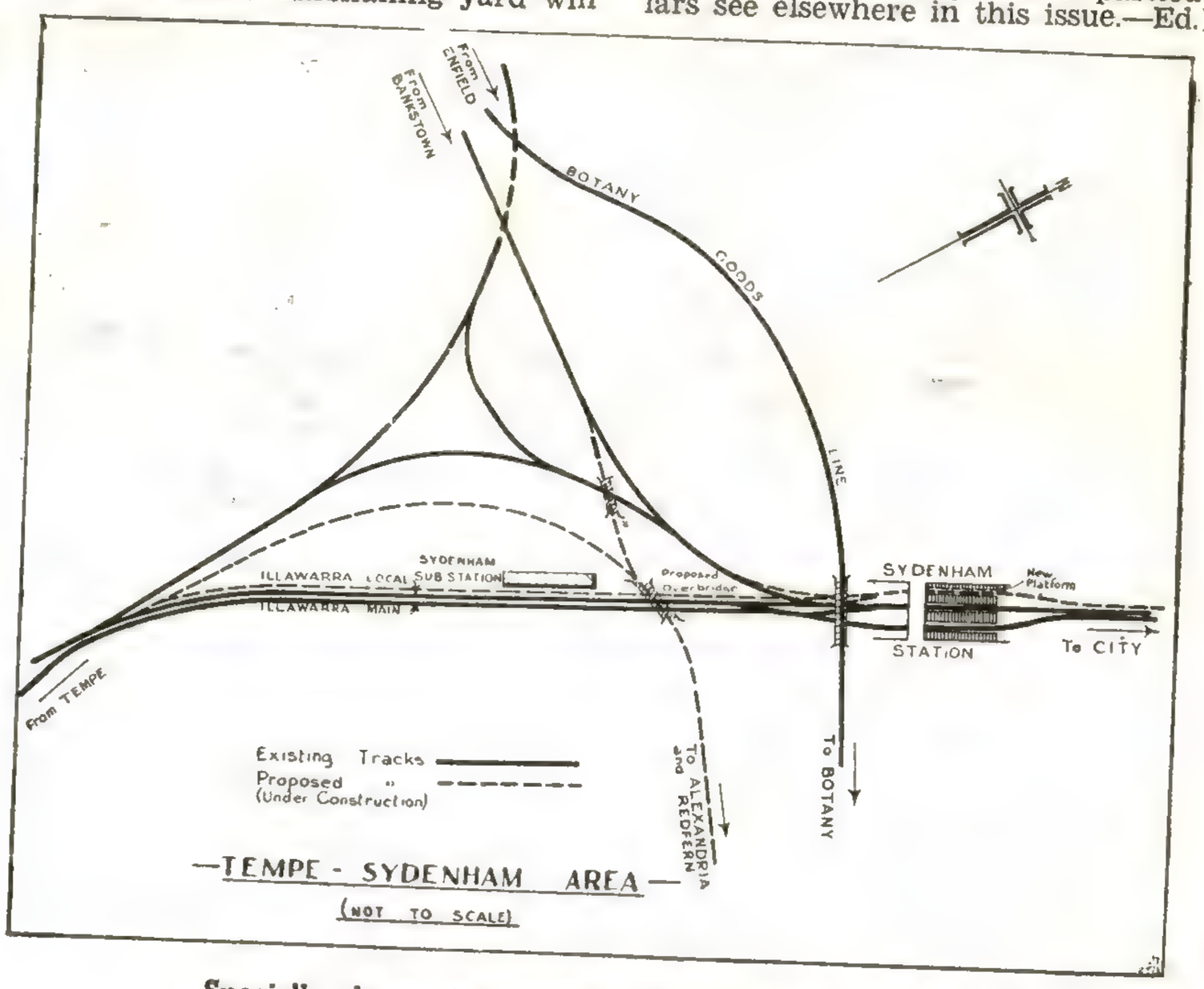
Surveys are being undertaken to determine possible sites for refuge sidings (loops) on the difficult Blue Mountains section between Valley Heights and Katoomba, where the existing highway level crossing will be eliminated by provision of a road underpass, designed in co-operation with the Main Roads Department and the Blue Mountains City Council.

MORE ELECTRIFICATION?

A new down marshalling yard will be constructed at Lithgow, on a site adjacent to the present locomotive terminal at Corneytown, and new up marshalling yard facilities will be provided by reorganising the present Lithgow Old Yard at Eskbank. Consideration is being given to possible extension of electrification west from Lithgow to Wallerawang, where extensive yard expansion and reorganisation is being carried out to meet the requirements of the Joint Coal Board.

In the interim, 57-class engines are authorised to work between Lithgow and Wallerawang. Engines off down trains arriving at Lithgow are serviced there and turned. They then take empties tender first to Wallerawang, pick up full 1500-ton loads and run through to Sydney, stopping for assistance at Lithgow, as described in the June, 1949, issue.

In the case of the quadruplication works in progress between North Strathfield and Hornsby, considerable progress has been made with the earthworks between Meadowbank and Eastwood, whilst construction of the new Parramatta River bridge is proceeding satisfactorily. (For particulars see elsewhere in this issue.—Ed.)



Specially drawn for "Railways in Australia" by Mr. N. J. Thorpe, this diagram shows the extensive works in progress between Sydenham and Tempe on the Sydney suburban lines of the New South Wales Railways. Each line indicates double track (except in the case of the Botany Goods line, which will be duplicated shortly), and crossovers, sidings, etc., are not shown.

The expansion of the underground City Railway, as a preliminary to the Eastern Suburbs line construction, has been in progress for many months. Excavations for the new underground platforms at Central Station (Chalmers Street) and approach tracks are well advanced. The earthworks for two additional surface tracks from Tempe to Illawarra Junction have mostly been completed. The provision of extra tracks on this congested section, particularly between Sydenham and Illawarra Junction will facilitate train working on the Illawarra and Bankstown lines. A start has been made on tunnelling under the Domain for the first section of the Eastern Suburbs line and on the excavations in Martin Place (near

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Macquarie Street) for construction of a new underground station. Controversy is still raging on the Department's proposal to construct the Eastern Suburbs line on an embankment flanked by masonry between King's Cross and Edgecliff, also the proposed route through Rushcutter's Bay Park.

Rolling Stock Parade

MODERN WESTERN AUSTRALIAN CARS

Cars of the three types depicted above, built at the Midland Junction shops of the W.A.G.R., have introduced many modern features to this 3ft. 6in. gauge system. Coloured green and cream, all cars have fluorescent lighting. From top to bottom they are:—

AH—1st class sleeper: 64ft. 9in. over buffers, 8ft. 11in. wide: tare, 29 tons 10 cwt.: 8 2-berth compartments, shower compartment and conductor's cabin. Hot and cold water in all compartments. Sound-proofed linings.

AYC and AYD (buffet)—1st and 2nd class saloon (for "Australind" express): 61ft. 9in. over buffers, 8ft. 8½in. wide: tare (AYC), 25 tons: (AYD), 27 tons: seat, (AYC), 1st class, 44: 2nd class, 56: (AYD), 1st class, 31: 2nd class, 39.

AY and AYB (brake)——1st and 2nd class suburban saloon: 61ft. 9in. over buffers: 8ft. 8½in. wide: tare, 21 tons 10 cwt.: seat (AY) 80, (AYB) 64. Operated in 5-car sets of AYB (1st), 3 AY, and AYB (2nd).

(Courtesy W.A.G.R. Institute Magazine.)

NEW BURDEKIN BRIDGE

QUEENSLAND'S LARGEST

A new high-level steel bridge over the notorious Burdekin River in North Queensland will be ¾-mile long, with 250ft. main truss spans founded on reinforced concrete caissons sunk 100 feet into the river bed.

The periodical turbulent flooding of the Burkekin River, which is spanned by the Queensland North Coast Railway between Home Hill and Ayr, has long presented operating difficulties to the Queensland Railways. The existing bridge is a pioneer low-level structure consisting of numerous short spans carried on wooden piles, with the inevitable result that it not only becomes submerged during floods, but is also in constant danger of being breached by debris piling up against it.

The average period of interruption to rail traffic each year is 17 days, whilst the nearby road traffic bridge is blocked for an average of 40 days each year, during which times North Queensland is isolated from the South, except via a devious route via Longreach, Winton and Hughenden, in the case of the railway. And this, too, is subject to local flooding and is of less traffic capacity than the busy North Coast trunk line.

In view of these serious and recurring interruptions to communications, the Queensland Government sent two senior engineers on a mission to India in 1946 to study the problem of scouring at bridges over rivers having sandy beds similar to the Burdekin and subject to seasonal monsoonal flooding. As a result of their investigations it was decided to construct a high-level combined rail and road bridge spanning the Burdekin, having a minimum headway of 10 ft. above the highest recorded, or estimated, flood level. This level is 41 ft: 6 in. above average dry-weather water level.

The Burdekin catchment area above the bridge site, which is only 11 miles from the sea, is about 53,000 square miles subject to torrential seasonal rains. The channel is about half a mile wide, with banks several feet above the level of the surrounding flat country. Even so, they are topped in high flood. The depth of sand forming the river bed exceeds 150 feet. To obtain preliminary information regarding the supporting power of the sand bed and the practicability of sinking caissons through it, a test reinforced concrete cylinder with an internal diameter of 4 ft. and 6-inch thick walls, was sunk 56 ft. into the river bed for loading tests. During one of the highest recorded floods, in March, 1946, this test cylinder did not move.

The final design evolved is for a combined railway and road traffic bridge to be built 5 ch. upstream from the existing bridge. The main channel will be spanned by ten through-truss 250 ft. spans supported on a reinforced concrete sub-structure consisting of two abutments and nine piers founded on caissons sunk 100 ft. into the sand. The approach spans are similar on both banks, consisting of three 60-ft. and eight 45-ft. deck-type plate girder spans supported by trestle piers. As well as a 22-ft. wide roadway, a single 3 ft. 6 in. gauge railway track will be provided. This latter will have sufficient clearance through the truss spans to allow for subsequent widening of the track gauge to 4 ft. 8½ in. The spans are all designed for standard gauge Cooper's E60 loading, plus the highest anticipated highway loading.

The reinforced concrete trestle piers for the approach spans will be founded on driven reinforced concrete piles. If sufficient steel is available it is hoped to begin work on the superstructure before the end of 1950. Of the nine caissons required, six in the river bed are already completed, and the remaining three are scheduled for completion by June, 1950. The first main truss span will be erected in situ on falsework and the remainder will be cantilevered out progressively as the piers are completed. The estimated cost of this ¾-mile long structure is £1,600,000. It will be the largest bridge in Queensland, and second only to the Hawkesbury River railway bridge in the Commonwealth.

Bridge Renewal on N.S.W.R. "Short North"

An intensive programme of bridge reconstruction and renewal is now being carried out by the N.S.W.R. on the "Short North" main line from Sydney to Newcastle. Largest single project is the construction of the new four-track Parramatta River Bridge at Rhodes.

The existing double-track Parramatta River Bridge, although strengthened, prevents the use of the heaviest locomotives (57 and 58-class 4-8-2's) and is in course of replacement by a new four-track structure having five main spans over the river. The two shore spans are each 157 ft. long, and the three centre spans are 159 ft. long. The supporting piers are formed from pairs of cylinders which are being sunk to foundation depths ranging from 20-100 ft. below high water level by the open dredging method, using compressed air and air-locks. The northern abutments and foundations at the Meadowbank side of the river are now approaching completion, and a commencement has been made with construction of the piers to carry the superstructure.

Much of the heavy constructional plant used during the building of the Hawkesbury River railway bridge has been tranferred to the Meadowbank side of the river, where a site has been prepared for the erection of the spans which will be floated into position on punts in a similar manner to the Hawkesbury spans.

Between Hornsby and Newcastle six other bridges are being renewed, or are about to be, and one has already been completed—that over the Wallarah creek between Warnervale and Wyee. New bridges to enable the operation of the heaviest locomotives, and at faster speeds, are being constructed at the following locations: Woy Woy, Broadwater (Gosford), Ourimbah Creek, Wyong Creek, Dora Creek and Cockle Creek, of which all but that at Broadwater are in hand.

All these new bridges are being erected adjacent to the existing structures, and the main lines will be deviated as necessary and in the process curve easements made to permit maximum speed of 70 m.p.h., except at Woy Woy, where the configuration of the country will not permit a greater maximum speed than 60 m.p.h. The Woy Woy bridge will consist of three 80-ft. steel spans founded on pairs of 10-ft. diameter cylinders at each pier and abutment, 75 ft. below water level. Broadwater, Gosford, bridge will have six 26-ft. steel spans formed from materials recovered from the dismantled old Hawkesbury River bridge. Ourimbah creek will be spanned by two 80-ft. spans similar to those at Woy Woy.

Most unorthodox will be Wyong Creek bridge, which will consist of five 61-ft. elliptical reinforced concrete arches spanning the creek and a roadway on either bank. Wallarah creek bridge, already completed, consists of two 56-ft. reinforced concrete spans carried on similar piers and abutments founded on rock. Dora creek bridge is the longest of the new structures with six 80-ft. steel spans carried on reinforced concrete cylinders founded at between 60 and 70 feet below water level. Deviation here will necessitate the construction of a new station at Dora Creek. This will also be the case at Cockle Creek.

Cockle Creek bridge, which is almost completed, consists of two 147 ft. 6 in. steel through-truss spans, identical to the shore spans of the Hawkesbury River bridge, founded on reinforced concrete piers extending 44 feet below water level. Longest of the deviations is that approaching the southern side of Cockle Creek—about ¾-mile.

With all these projects in course, and speed restrictions resulting therefrom, present train schedules on the Newcastle line will be shortened appreciably when the projects are completed, probably by late 1950, or early in 1951.

REFRIG. CAR SHORTAGE

Meat Exporters Perturbed

Meat exporters and wholesale butchers throughout the Commonwealth, but particularly in New South Wales and Queensland, are worried by the shortage of railway refrigerator cars, which threatens to hold up increased exports of meat to Britain. Only limited numbers of cars are in service on the mainland railways—some 200 in New South Wales. Local contracts have been let for 125 new cars for the N.S.W.R. and 20 cars for the Queensland Railways, which will be required to haul the bulk of the meat produced as a result of the Commonwealth Government's development of the Channel Country of South-west Queensland for meat production.

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GAUGE STANDARDIZATION
S.A. Accepts Commonwealth Offer
Vic. Agrees—W.A. Seeks Favourable Terms

The gauge standardisation project of the Commonwealth Government, seemingly in the doldrums, is front page news again. Last month the Commonwealth and South Australian Governments agreed on a revision of the original tri-State and Commonwealth plan for standardisation in Victoria and South Australia, with New South Wales "co-operating." This was rendered necessary by N.S.W. refusal to contribute towards the cost of standardisation "in other States" — an unfortunate and parochial outlook. The Commonwealth will bear 70 per cent. of the cost of standardisation in South Australia, and the Victorian Government has promised to accept the Commonwealth proposals, although the question of commencing the conversion is presumably still subject to further legislation being enacted by Victoria. The conversion in South Australia will depend to a large extent upon concurrent work being undertaken by Victoria.

During the visit of the Commonwealth Minister for Transport (Mr. Ward) to Perth recently, proposals were made that the Commonwealth should pay 50 per cent. of the estimated cost of £34,000,000 for conversion of the Kalgoorlie-Perth line to standard gauge, and rehabilitation and modernisation of the remainder of the existing Western Australian system. Western Australian authorities are seeking what they claim as "better terms" from the Commonwealth, which is unlikely to agree to anything short of its own formula, and certainly not to one Western Australian proposal for complete conversion to standard gauge at a cost of £62 millions. The Kalgoorlie-Perth and Fremantle route would follow that of the existing Eastern Goldfields Railway, with a deviation through the Darling Ranges from Toodyay, via the Avon Valley. This route has already been surveyed since the end of the war. Principal Western Australian opposition to the Commonwealth proposals is that trunk line conversion would create the anomaly of "breaks of gauge" at junction points, such as Southern Cross, Merriden, and Northam, etc.

Meanwhile the Silverton Tramway Co., operating the 34-mile vital link between the South Australian border and Broken Hill, N.S.W., which would be vitally concerned in any connection between the N.S.W. and Trans-Australian systems, has ordered new locomotives and additional rolling stock for its 3 ft. 6 in. gauge line.

Australia is not so serious, as less use is made of refrigerator cars for meat transport in those States than in N.S.W. and Queensland. However, if inland killing is resumed on a large scale in Victoria, as has been advocated, more and more modern refrigerator cars must first be provided.

Last year the N.S.W.R. let a contract for 50 top-bunker refrigerator cars of a new design based on latest American developments in refrigerated transport to Tullochs Phoenix Ironworks Pty. Ltd., Rhodes, N.S.W., but none have been delivered. More recently, Departmental officers have recommended purchase of 150 more cars from overseas builders to cope with meat traffic which will result from establishment of inland killing centres at Joppa Junction (near Goulburn), Bomen (near Wagga Wagga), Dubbo and Gunnedah. The first two of these plants are shortly expected to be ready for operation, which will depend almost entirely upon the availability of refrigerated railway transportation.

Despite recent criticism in the State Parliament, the Queensland Railways have, in conjunction with the Australian Meat Board, remodelled and extended the cattle-loading facilities at Mount Isa railway yard to speed the loading of cattle consigned to the seaboard treatment plants at Ross River (near Townsville) and the Lakes Creek (near Rockhampton) and to a lesser extent at Cannon Hill near Brisbane). A similar enlargement of cattle-loading facilities was recently completed by the Commonwealth Railways at Alice Springs, N.T., where livestock loading has now been concentrated at a yard some two miles outside the town and connected to the Central Australian Railway by a spur line built during the War to serve Army Ordnance Depots. A complete train can now be loaded in one operation from a single ramp, saving time, eliminating marshalling and minimising the dust nuisance in the town.

Despite these evidences of the intention of the railway authorities to improve the handling of livestock, the situation must be faced sooner or later in Australia, that inland killing and refrigerated transport of carcases must replace livestock transport to seaboard killing centres, as has occurred in Argentina and the United States, which are much larger cattle-producing counries, and with which Australia must compete in the world's markets in more normal times.

The following is a list of the fifty additional 55-class 2-8-0 freight locomotives converted to oil-burners by the New South Wales Railways during the coal strike: 5504, 5505, 5510, 5511, 5512, 5514, 5518, 5520, 5521, 5524, 5526, 5528, 5531, 5532, 5536, 5543, 5544, 5548, 5551, 5552, 5553, 5554, 5555, 5556, 5560, 5562, 5563, 5564, 5567, 5569, 6670, 5572, 5573, 5575, 5576, 5580, 5582, 5584, 5586, 5587, 5593, 5591, 5593, 5598. 5599, 5602, 5604, 5609, 5612, 5614, 5615, 5617. All were converted to burn diesel oil (distillate) without steam heating coils in the fuel tank, unlike the previous twenty conversions, which burn heavy Bunker-C oil fuel.

During the coal strike the Western Australian Railways used a 40-seat dining car at Perth station to serve meals to the public. The stove was fired with wood. This enterprise was greatly appreciated by the extent of public patronage, and the Department deserves congratulations for its initiative in an emergency.

During the past few months Queensland Railways have moved four of the six ASG locomotives formerly stored at Rockhampton to Brisbane en route to Evans, Deakin & Co., works at Rocklea for modification before delivery to the Tasmanian Government Railways. M. Rogers, of Brisbane, reports having seen Nos. G-12, G-13, G-18 and G-52 at Mayne. He also reports five more C17 engines delivered from Clyde Engineering Co., Nos. 932, 933, 936, 937 and 934, which went into service in that order. He also reports that the 20 Pacifics on order from Vulcan Foundry Ltd., England, whilst conforming to the dimensions of the existing B18¼ class, will be of substantially modernised type to be identified as BB18¼ class. Twenty-five additional engines are also on order, presumably from the same builder. The first ten Beyer-Garratts have been allocated road numbers 1001-1010, and according to some reports the first deliveries are scheduled for early in the New Year.

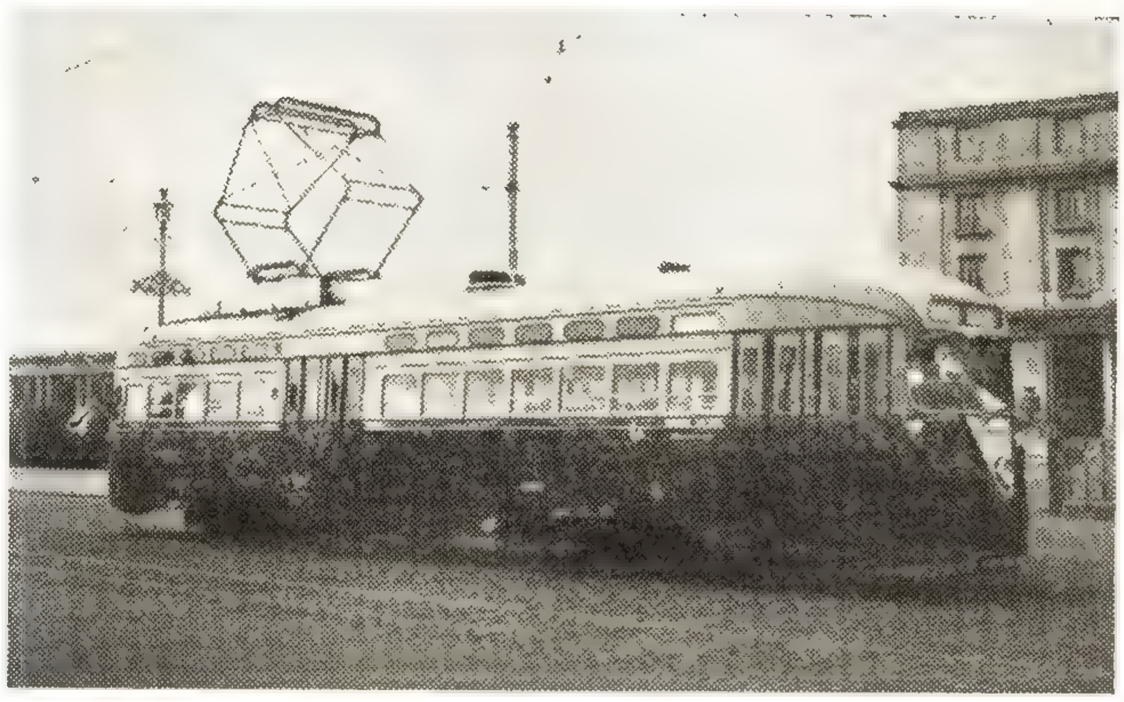
Tasmanian Railways have called tenders for one diesel-mechanical road-shunting locomotive of greater speed and power than the V-class Vulcan-Drewry shunting units. Further KG flat cars (with ends) are to be constructed. Tenders will be called for construction of underframes. The first DB bogie brake vans with welded underframes and new bogies are already in service.

Commencing October 10, faster, more frequent services were provided on the Gippsland line, and the southbound afternoon train from Albury to Melbourne (connecting with the N.S.W.R. Albury Mail) was altered to depart earlier and run express south of Seymour to arrive in Melbourne at 7.30 p.m., instead of 10.0 p.m. The converted buffet car "Taggerty" was reinstated on the 5.40 p.m. down Bendigo and the 12.15 p.m. up ex Bendigo on the same date. For the first time since 1942, printed handbills have been issued giving the new timetables, and are available on application at stations or the Victorian Government Tourist Bureau.

N.S.W.R. 58 Class

A Sydney correspondent states that the N.S.W.R. 58 class will have spoked wheels, not boxpok as stated in our July issue.

ELECTRIC TRACTION



The first American-built PCC car to operate in Europe—No. 1419 of the Societe National des Chemins de Fer Vicinaux, Belgium. Note the large pantograph in place of the more familiar trolleypole. Perhaps one of our Belgian readers could explain how the car came to be standing on the wrong track—most unusual for a single-ender. (See article in this issue by Gunter Stelzs, who took this photograph.)

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

SYDNEY, N.S.W.—

A sweeping reorganisation of services and administration is to be put into effect immediately by the new Commissioner (Mr. R. Winsor). Tramways and buses have been placed under unified control, with two superintendents each controlling separate districts. Unnecessary competition between trams and buses and with railways is to be eliminated. Changes in services will include: (1) Bustitution of last 2¾ miles of Watson's Bay line beyond Dover Road. The whole route will be bustituted when the new railway is completed. The section to be closed was built in 1903-1909. Express buses will serve points beyond Dover Road. (2) The last three miles of the Ryde line beyond Gladesville will be treated similarly and the line will ultimately cease to run beyond Rozelle. The outer section was opened in 1910, and there was a 1½-mile branch at Ryde, closed 15 years ago. (3) The Darling Street Wharf-Canterbury service will terminate at Dulwich Hill (City services to Canterbury will continue). (4) Attention will be given to stop "bunching" on all routes.

Recent measures to overcome fare dodging have been very successful, revenue having increased by nearly £4,000 per week. Latest moves include the use of "Glamour Girls" to sell tickets at tram stops in the city. A time limit prevents misuse of the tickets.

All trams are to have oil-burning tail-lights for night operation.

Tracks along Broadway from Railway Square to City Road Junction are to be relocated (this thoroughfare was widened considerably in recent years.)

NEWCASTLE, N S W.—

The long-awaited closure of the Wallsend route took place on Saturday, November 5. The last car actually ran shortly before 6.00 a.m. on Sunday. Three bus routes will replace the tramway, as it is not possible to run buses over the entire route. The Commissioner stated that rehabilitation of the tracks would have cost £150,000 and. with new trams, well over £1 million. It is expected that all trams will cease by Easter, 1950.

MELBOURNE, VIC., M.&M.T.B.—

During October 7 new SW6 cars were outshopped from Preston, being Nos. 943-949. There are now 100 SW6 cars in service, the first being constructed in 1939. Bodies of SW6 cars from 950-961 are in stages of construction. The Public Works Committee of Parliament are reporting on the plan to connect the Footscray isolated lines with the main system, via Maribyrnong, a distance of under a mile. The crossing special work at the intersection of Latrobe Street diversion with Elizabeth Street tracks, was put into position early in November.

MELBOURNE, V.R. TRAMWAYS—

The Minister is at present considering various alternatives for the future of the two lines. The Sandringham Council, in reply to a questionnaire on the matter state that they favour M.M.T.B. control and a connection between the two lines via the Beach Road. No decision has been made by the Government.

ADELAIDE, S A.—

A new line to carry Showgrounds traffic and thus relieve Currie Street-City, will be constructed by the M.T.T. It will run from West Terrace along Franklin Street to Victoria Square, thence along the west side of the [illegible], turning finally into Grote Street. Another line will run along

(Continued on page 24)

THE AUSTRALIAN
ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President : C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone : LF 1665)

If outside Victoria, communicate with the nearest representative:

ADELAIDE : Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND : Mr. D. Fallwell, 3 Matai Rd., Devonport, N.Z.
CHRISTCHURCH : Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON : Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE : Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH : Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY : Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON : Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.

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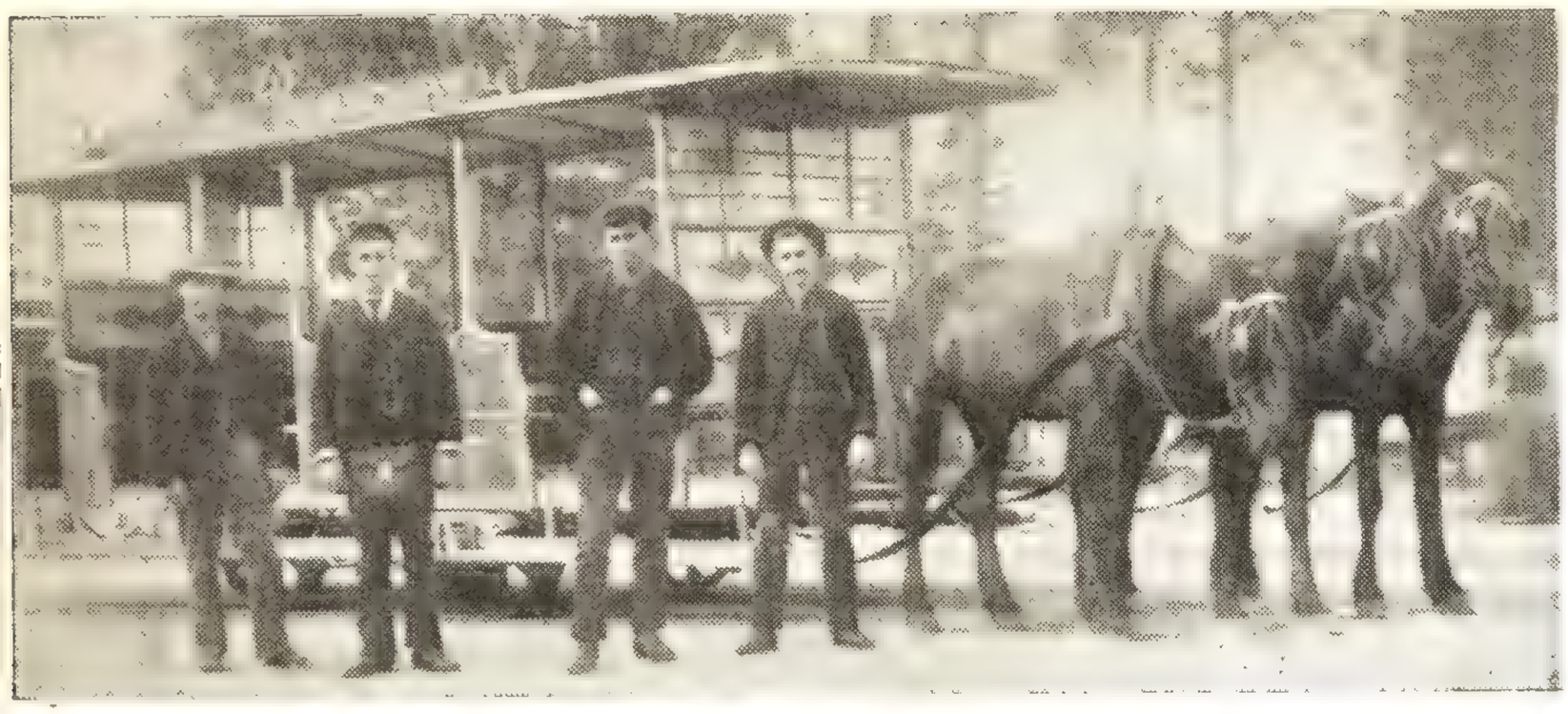

Horse tram on the Ponsonby route. Photo from the collection of Mr. G. C. Stewart.

AUCKLAND TRAMWNYS

A BRIEF SURVEY

By G. C. Stewart

(Continued)

Now, Farmer's store lies in Hobson Street, a north-south thoroughfare running parallel with Queen Street, the city's main shopping centre, and linked with it by a series of short, steep roads. The store had operated a motor bus service from Hobson Street in a southerly direction, which turned into Victoria Street, traversed Queen Street, and rejoined Hobson Street via Wyndham Street. This route was converted for trolley-bus operation and six Metro-Vic trolley-buses with local bodies operate thereon; they are single-deck. There is no charge — Farmer's contributes financially towards the system which is maintained and manned by the Board's staff. The buses are painted with light green lower and cream upper panels, and the legend "Farmer's Free Bus" is carried

In conjunction with the free trolleybus service, Farmer's has a free tram service, for which the Board's trams are used. This starts from the farther side of Wyndham Street, adjoining the store itself, and runs along Hobson Street to Beresford Street, close to Karangahape Road, another important shopping area.

The three tram routes scheduled for conversion to trolleybus operation are: City-Herne Bay (portion of the Three Kings-Herne Bay run); City-Ponsonby; and City-Richmond Road, all of which form a group of lines in the city's north-west. The Herne Bay route has been the first to go. Ponsonby and Herne Bay were the earliest areas to be linked with the city centre by tram and, in the case of the former, there was a horse tramway running from the present Three Lamps terminus to the end of Ponsonby Road (Newton).

The new trolleybuses, which are as heavy as the regulations permit for 6-wheel, single-deck vehicles of their type, are Metro-Vic's, seating 40 and carrying some 30 standees (see illustration R. in A., 9/49.—Ed.). They have found disfavour already. It should be explained that the buses, which are 8 ft. 6 in. wide, were planned to terminate their city runs on the Farmer's circle, and motorists say there will not be enough room for a trolleybus and a tram to travel side by side down Queen Street without causing congestion. The real point is that, in Auckland, motorists are granted extreme licence in parking. The Board has every intention of using the circle, and is most unlikely to remove the present valuable tram services from Queen Street for a long time yet. (As a matter of fact, if it did the shopkeepers would be quick to complain.) It is quite certain that there will not be enough room for a line of parked cars at the kerb, a path for an 8 ft. 6 in. trolleybus, and free passage for a tram side-by-side.

(Since these lines were written, it has been decided not to use Queen Street for trolleybuses.—Ed.)

To end on an historic note: the system began as the Auckland Electric Tramways, a subsidiary of the British Electric Traction Company, in 1902; Electric Traction Company, in 1902, the tramways were taken over by the Auckland City Council in 1919, and by the Board in 1928. The Board is elective.

The tram services of the Board, all of which traverse at least a portion Queen Street, may be considered under three heads.

(a) Those running from the City terminal at the northern end of Queen Street to the suburbs. These include City-Onehunga; City-Mount Roskill, and City-Zoo/Westmere.

(b) City-suburban services employing Queen Street as part of the run-round loop, traversing on the way in or out Hobson Street or its opposite number, Anzac Avenue. These are City-Point Chevalier; City-Richmond Road, and City-Victoria Avenue.

(c) Suburb-to-suburb services, i.e., Herne Bay-Three Kings; Ponsonby-Railway; Alondale-Remuera/Meadowbank, and Owairaka-Great South Road.

On Sundays, the Ponsonby-Railway service is split. The major portion is run from Ponsonby as far as Queen Street, where it is diverted and carries on to the dead-end terminal. The other portion of the service begins in Customs Street East, near to the dead-end terminal, and is run thence to the railway station.

The "Farmers" tram service has been referred to above.

(To be continued)

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P.C.C. in Europe

NEW BELGIAN CAR

By Gunter Stetza

After the introduction of P.C.C.-similar streetcars in Blackpool (England) and Barcelona (Spain), the Brussels Tramway Co. as first European transportation-system has purchased an original P.C.C.-car from St Louis Car Co., St. Louis.

The introduction of this car, which joins all advantages in technical respect, has caused a very lively echo among the transportation experts. Although the experimental rides on several routes of the Brussels system have satisfied in any respect, a regular service could not be undertaken because of the width of the car of 8 ft. 2 in. Nowadays the "Societe Nationale des Chemins de Fer Vicinaux" (Belgian Interurban Streetcar Co.) has taken possession of this car, equipped it with pantograph for operation on the coast route Knokke-oute.

The car is equipped on North American principles in any respect and for "pay-as-you-enter" traffic,

which has been unknown in Belgium till now. Whilst the entrance is in front by a double folding door, the exit takes place in the middle by a double folding door, too. In the anterior part there are single seats on one side and double ones on the other side so that a large standing room is arranged, whilst in the back part of the car double seats are ordered on each side, in which case the width of the seat is 1 ft. 5 in. only. All seats are arranged in direction of ride. The seating capacity is 50; the number of standees is 50, too. With regard to the standing passengers the typical American "standing-windows" are ordered. A sufficient number of grab handles along the whole car guarantee safety for the standing passengers.

The driver's seat is separated. It is remarkable that the motorman's seat doesn't find in direction of ride exactly but, in consideration of the foot pedals and other apparatus, transversely. The left of the three foot pedals serves for power connection, the middle one for braking, and the right for speed regulation. With his hands, the motorman operates the switches for opening and shutting the doors, as well as for light, ventilator and warning signals. Besides, a shunt-controller is ordered in the driver's cabin, consisting of four switches—1 = driving, 2 and 3 = driving back, 4 = braking resistance.

The car has four motors of 55 h.p. each at an empty weight of 17 tons. As the "ideal" weight is found out with 10 h.p. per ton, it is exceeded by 3 h.p. per ton, so that it will be reached in loaded state (22 tons). There are 79 notches for driving and also 79 for braking ordered, a very favourable feature of the Westinghouse Multi-Notch Controller. The general speed is about 45 m.p.h., the highest speed 50 m.p.h. Owing to the excellent acceleration capacity, the car can attain a speed of 40 m.p.h. already after a ride of a quarter of a mile from a stop.

Outward, the first European P.C.C.-car is a jewel, contrasting effectively from the usual Belgian ivory livery by a green/cream colour.

ANTI-FREEZING EQUIPT. FOR THIRD-RAIL LINES

(Adapted from "Engineering")

The London Transport Executive has introduced a device for preventing the formation of ice on conductor rails in the open-air sections of its railway tracks by distributing anti-freeze liquid automatically by the passage of trains. The covering of ice, which acts as an electrical insulator, causes trains to stall, and is a source of delays in winter. About 9 of the distributors were used on 90 of the distributors were used on the Bakerloo line during 1946-47 and, as they proved successful; installation was continued during the summer. All lines above ground were fully equipped by the end of 1948. The programme required the manufacture and installation of approximately 85 anti-freeze distributors.

The anti-freeze equipment consists of a metal bath which embraces a gap in the rail and contains anti-freeze liquid, which is transferred to the top surface of the conductor rail by the passage of the car collector shoes over a rubber roller partly immersed in the bath. The equipment may be brought into use, or put out of action, by moving a small lever at one side of the bath, which raises or lowers the roller. The distance between adjacent distributors on the same rail depends on local conditions, particularly track gradient and train stopping places. It has been found that, if a distributor is left in operation continuously, the frequent passing of collector shoes will spread the anti-freeze solution along the top of the conductor rail for some miles; but since it is necessary for the rails to be wholly covered within three or four hours after bringing the anti-freeze equipment into operation, the distance between adjacent distributors on sections where stalling is expected to occur, has been fixed at 600 to 900 yards.

Previously, the formation of ice was prevented by running special trains. Anti-freeze liquid was sprayed on to the rails from these trains when freezing temperatures were expected; but there were several disadvantages associated with this method. It was often necessary to switch on the current at short notice during the night—a practice which interfered with maintenance work. Furthermore, it was not always possible to cover the rails in time to prevent trouble; and during the winter it was necessary to maintain a considerable number of "sleet" trains at depots, where they had to be kept manned ready for immediate use.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held,—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

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A.E.T.A. NOTES

MELBOURNE BRANCH

November Meeting

Our guest speaker being unable to attend, an impromptu talk was given by Mr. J. Richardson on the basis of two interesting letters received that evening from members of affiliated bodies.

Mr. Geoff Upfill was nominated for membership.

December Meeting

It is anticipated that the lecture postponed from last month will be given at this meeting.

More Members Wanted

More members are urgently needed to enable the A.E.T.A. to carry out its growing tasks and extend its influence. All readers interested in tramways are invited to come along to our meetings, where a warm welcome is assured.

Cranbourne Hike

A brief lull in Melbourne's long spell of bad weather enabled members to enjoy a pleasant day for the Cranbourne hike. Although designed primarily as a social outing, the trip provided the opportunity to inspect the two lengthy private railways built for the sand traffic. Close examination of the disused line was made with a view to its possible acquisition for tramway museum purposes—an Australian version of the famed Branford Electric Railway. Though beyond our present financial capacity, this project is being kept very much in mind for the future.

The Down journey to Cranbourne was by stopping electric train as far as Dandenong, interest being afforded by the extensive wired sidings to lineside industries in this area. A waiting P.E. car and trailer provided a pleasant surprise, full advantage being taken of the "view-ahead" facilities. Complete variety was obtained by the return trip on a through steam passenger train.

Special Car Tour

Watch this column, or keep in touch with the Secretary for details of our Fourth M. & M.T.B. Special Car Tour early next year.

SYDNEY BRANCH ACTIVITIES

At the Third Annual Meeting of this Branch, held recently, a good roll-up of members was present to hear the President's Annual Report which included the following points:

Attendance of members at meetings has been good, usually between 70 and 80 per cent. being present, but dropping to 50 per cent. on one occasion. Membership has shown a net increase of six and now stands at 32. Finances have continued to show an improvement, and the Branch has a credit balance of £8/7/7 despite higher room rent and other working expenses during the year. Unofficial tours were undertaken during the year, and the following lines were visited: National Park, East Hills, Ascot-Brighton, Camden, Anzac Range, and Cronulla.

The following officebearers were elected for the ensuing 12 months: President, Mr. A. G. Renwick; Vice-president, Mr. C. R. Field; Secretary, Mr. G. L. Johnson; Treasurer, Mr. I. K. Winney; Recorder, Mr. Ritchie; Publicity Officer, Mr. K. Miller; Additional Councillors, Mr. A. D. Greenwald, Mr. N. Chinn and Mr. R. Murray.

The following new members were admitted: Mr. A. Ackerman and Mr. A. Hudson.

Sydney Branch Pamphlet

Three members of the Sydney Branch, Messrs. Chinn, Murray and Miller, recently published a pamphlet entitled "Your Public Transport." Three thousand copies of this well-written and well-edited paper were distributed to houses along a large number of tramlines and results were very favourable. The pamphlet also received an excellent write-up in the Sydney Press. The three members responsible deserve the hearty thanks of the A.E.T.A. for their efforts in fostering the Association's cause.

Master Transport Plan for Sydney

The Council of the Sydney Branch is at present engaged in producing a master plan for the transport arrangements of the city of Sydney. This will be very comprehensive and will be presented to the necessary authorities in due course. The Branch is also contemplating a similar report on the Newcastle system.

Future Activities in Sydney

On Friday, November 25, at 8 p.m., the Sydney Branch is running a film evening in conjunction with the Vacuum Oil Co. This will be held in the Vacuum Theatrette, Kembla Building, 58 Margaret Street, Sydney, and will include novel and entertaining featurettes. Tickets are obtainable from the Secretary of the Sydney Branch, 56 Stuart Street, Longueville.

Everyone is invited to a car-riding tram tour to take place either late in January, or early in February, over the Watson's Bay and Ryde lines. The Sydney Branch is organizing this tour and is hoping to hire a PR 1 class tram car. A novel and entertaining afternoon is assured. Further details will be announced later.

Branch Programme

This Branch meets on the third Friday in every month, in Room 23, Trades Hall, Goulburn Street, Sydney, and the meetings take the form of General Discussion nights alternating with special lectures and talks.

The programme for the coming months is as follows:

November 18: General Discussion and Tramway Topics.
December 16: "Staff and Ticket Working," by Mr. A. G. Renwick.
January 20: General Discussion and Tramway Topics.
February 17: "Current Tramway Events," by Mr. K. Miller.
March 17: General Discussion and Tramway Topics.
April 21: Talk by Mr. I. K. Winney.

Australia's First Electric Tramway

This was the subject of a paper read before the Sydney Branch on October 21, by Mr. G. L. Johnson.

(A small booklet on this line is to be published shortly.—Ed.)

RAILWAY PEN FRIENDS

If any of our younger readers are interested in obtaining pen friends in Great Britain and other countries, here is an excellent opportunity.

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Letters to the Editor

GAUGE UNIFICATION

The Editor,
Railways in Australia.
Dear Sir,

Reverting to J.B.G.'s article on standardisation (Rin A-3/49), one or two thoughts cross my mind. An Australian standard gauge is probably a good thing when one considers only our own purely national requirements, but in the event of war we may find that we are called upon to supply equipment to Europe, and obviously 4 feet ten-and-a-bit would hardly go well on the German or French systems for instance. Likewise, we might have to have extra equipment brought into the country to help in a war here. Again, this gauge would cramp our style.

As regards Indonesia, our standard gauge would be of no use here, for the Java State Railways, except for a short bit of standard gauge track between Pasadoerang and Meestercornelius, are laid to the 3 ft. 6 in. gauge whereon operate the fastest trains on this gauge.

It may be of interest to note that All-India Radio recently reported that India and Pakistan have reached an agreement with the Iranian State Railways for the extension of a standard gauge line through India with strategic branch lines to the North West Frontier. This line will, if present plans go ahead, link up with the Chinese systems via Burma, Thailand and Cambodia. A branch will also reach Singapore.

In view of this, might I say that we cannot run trains to Indonesia or Malaya, but we can run train ferries, and if India and Pakestan do eventually scrap the 5 ft. 6 in. and metre gauge systems in favour of standard gauge, the need for Australian moves on Stephenson's gauge of 4 ft. 8½ in. is even more urgent.—Yours, etc.,

L.M.S.

(Name and address supplied.)

S.A.R. '720' CLASS LOCO.

The Editor,
Railways in Australia.
Dear Sir,

With reference to the photograph of a S.A.R. '720' class loco. published on page 6 of your September issue, I am afraid I have doubt as to whether this loco. is No. 720, class leader of the 720B class, as claimed.

However, I am not certain, and, as the reproduction in my copy of the magazine does not make it possible to check the number, I should be pleased if any other reader could confirm or dispel my doubts. —Yours, etc.,

A. D. LOCKYER.

Barmera, S.A.

(We are inclined to share Mr. Lockyer's doubts. The block used to print this picture was one of a number lent to us recently and of which we had no proofs, making exact identification difficult. Close examination of several copies suggests No. 7.—Ed.)

Fan Mail

LESTER SCARBOROUGH, Hamilton, O., U.S.A.—Dollar problems and the high price of oil have limited diesel development here, but we do have them. We also have readers who don't think we print enough about them! Sorry to hear about the suburban trains—ours are continually expanding, with new cars, routes and electrification where it does not already exist; fortunately for magazine editors, who have no auto!

JOHN T. RIDGE, Holland Park, Qld.—Thanks for good wishes. Mr. Marshall-Wood would be glad of any news you could send.

HAROLD W. FAWCETT, Sedbergh, Yorks, England.—Review of U.K. tramways much appreciated by A.E.T.A. members. Your good wishes appreciated and reciprocated.

G. J. HUNT, Marrickville, N.S.W.—Noted, thanks.

COLIN WOOD, Liversedge, Yorks, England.—Thanks for Belle Isle photos; which I hope to use later. Why have concrete in open country? Also, how do city cars fare sandwiched between the Middleton Bogies in peak hours?

DON BOURNE, Werris Creek, N.S.W.—Passed on to "Question Box."

DUDLEY P. JONES, Worcester, Mass., U.S.A.—You will have noticed the improvement re carryover text. The small pages of "Tram Tracks" were a handicap.

MORLEY J. KELSEY, West Haven, Conn., U.S.A.—Thanks for enclosures; sorry to hear of bad luck.

A. B. HAFEY, Tempe, N.S.W.—Thanks for news items!

Not Broadmeadows

We are advised that the old V.R. suburban train shown on page 6 of the November issue was at Somerton, not Broadmeadows. When the photo was taken, many years ago, Somerton was an interlocked junction, hence the signals.

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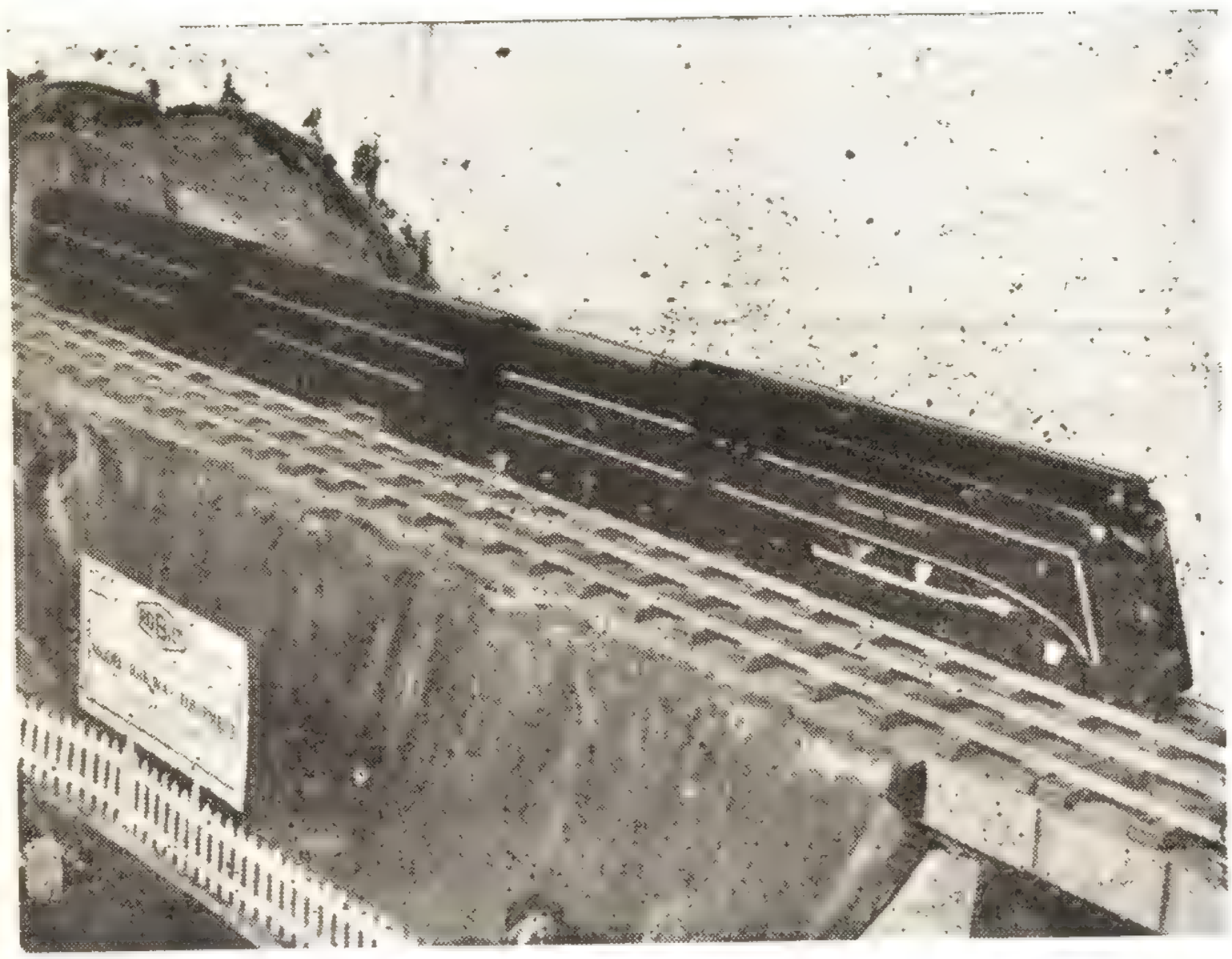

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FREMANTLE, W.A.—
News is to hand that the F.M.T. & E.L.B. closed the Beaconsfield route on 14/11/48, a distance of 2.687 miles. Two more Combination cars have been withdrawn, leaving 25 cars in service. The route mileage now stands at 7.765 m., with lines operating to Marmion Street, South and East. In the year ending August, 1949, the trams carried 4,640,910 passengers and the buses 3,276,174. Figures show that the tram services earn 10d/mile more than the buses. The overall profit, including electricty supply service, came to £7,375.

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

MR. R. J. TATTAM, East Kew, V. asks the following questions:—

1. Why are swing-door electric suburb. sets of the V.R. used only on the S. Kilda, Port Melbourne, Thomastown, Hurstbridge, Lilydale and Ferntree Gully lines?

ANSWER: For convenience in working, these sets are kept together on a minimum number of groups of lines. It may also be due to the fact that Tait cars with sliding doors were put into service on the other lines first, even in the steam-working days.

2. What is the dotted line on Victorian Railways maps between Orbost and Brodribb?

ANSWER: This is a railway, construction of which was authorised but never commenced.

3. Is the passenger service to Portland from Melbourne through-routed?

ANSWER: Yes.

MR. A. J. THOMAS, Concord, N.S.W., also asks a number of questions:—

1. Are any private locomotives operated on any of the lines in the Broken Hill area serving mines, other than those of the Silverton Tramway Company?

ANSWER: Not nowadays; all are worked by the S.T.C.

2. Does the Broken Hill Proprietary Company operate any of its own locomotives at its works at Port Pirie and Wallaroo, South Australia?

ANSWER: At Port Pirie, yes, but no longer at Wallaroo.

Answers to a number of further questions from Mr. Thomas are being sought, and will appear in the next issue.

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Railways in Australia

and

A.R.L.H.S. BULLETIN

The Magazine about Australian Trains

Incorporating TRAM TRACKS the Electric Traction Monthly

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OUR COVER PICTURE

Victorian Railways' crack train "Spirit of Progress," headed by streamlined S300 class 4-6-2 "Edward Henty."

(From an official V.R. print.)

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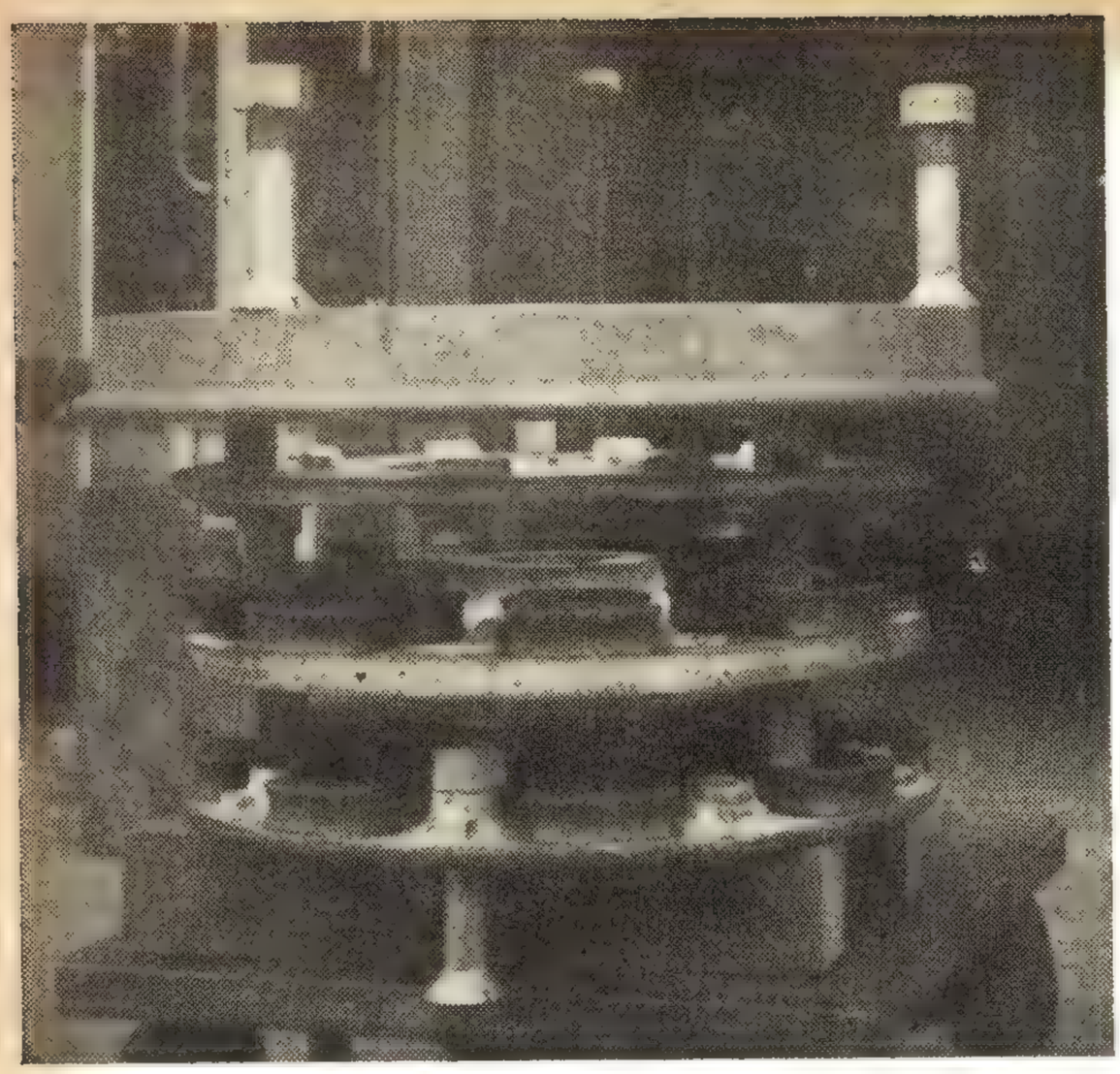
BRISBANE TRAMWAYS' RESILIENT WHEEL
New Australian Development

The result of combined research by engineers of the Brisbane City Council Transport Department, and the University of Queensland, the resilient wheel recently introduced by the Department constitutes the first practical endeavour of its kind in the Australian tramway industry.



Unique in design, the Department's wheel is suitable for accommodation in the 400 Class car truck (patterned on M. & M T.B No. 15 Truck) and to date, one such car has been, experimentally, so equipped.

Making use of a steel wheel, machined from the back so as to provide an off-set web, which in turn, is formed to clear the axle, the tyre is fitted resiliently to the axle by means of three circular cast plates, a number of renitent rubber pads and a similar number of machine bolts and nuts.

As can be seen immediately below the tyre in the accompanying photograph, the first of these cast plates, annular in shape, provides a series of segment lugs which serve to locate the disc concentrically against the wheel web and clear of the axle. Radially in front of these lugs, but on the reverse side of the plate, are an equal number of integrally cast bosses, each drilled to take a machine bolt as a running fit and to coincide with a similar hole in the wheel web.

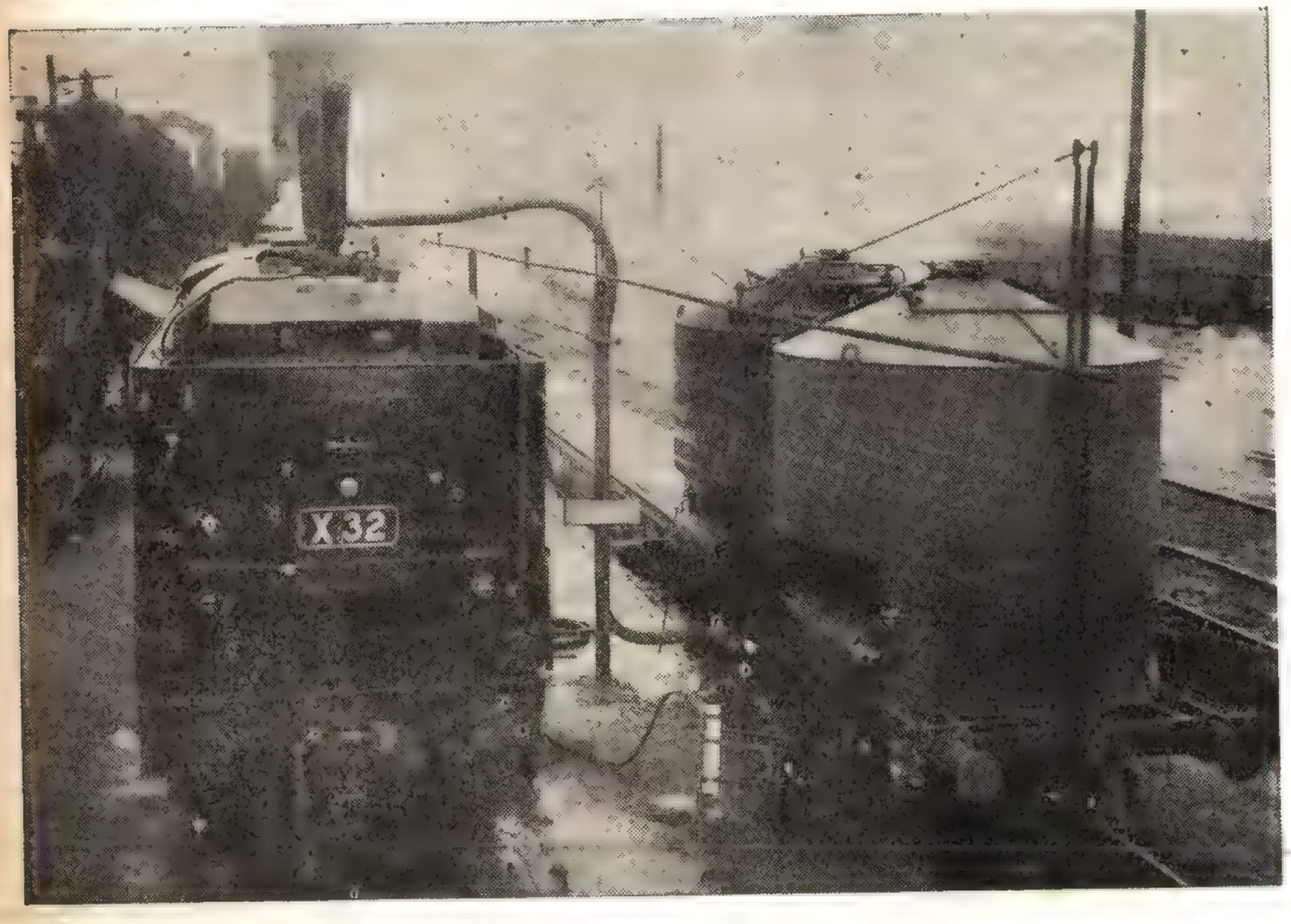
The next cast plate — the intermediate disc, allows for axle mounting by means of a centrally situated boss and, as can be seen in the illustration, about this are holes suitably cast to clear the bosses of the first disc — when both discs are closely and truely mated.

Except for the locating lugs, the third cast plate is almost identical with the first and would be so but for the fact that its boss holes are suitably flared to take the countersunk machine bolts, as shown.

On the inner surface of both extreme plates, between each pair of bosses, are two radially situated raised circular seats and immediately in line with these are similar projections on both surfaces of the intermediate disc. Their purpose is to locate the renitent rubber pads which are provided with suitable concavities to mate.

From the photograph, it can be seen that, when the machine screws are slipped through and the nuts tightened on the outside of the wheel web, both the extreme plates and the wheel will be firmly locked to the intermediate plate, but through the medium of the rubber pads, will have no metallic contact with same.

Although having been in service for only a relatively short period of time, a noise reduction of 40 per cent. is already claimed for the performance of the experimental car and, no doubt, were the wheel incorporated in a truck having P.C.C. type suspension and dynamic braking, this figure could be greatly magnified.



PULVERISED BROWN COAL AS LOCOMOTIVE FUEL

Reproduced by courtesy of the Victorian Railways, our illustration shows the fueling arrangements for the experimental operation of a V.R. freight locomotive fired with pulverised brown coal. This fuel, which is highly explosive in contact with the atmosphere, is transported in the special vehicle seen at right.

On the opposite page is a fine view of the locomotive, X class 2-8-2, No. 32, hauling a 550-tons test train on the Bendigo line near Sunbury, 24 miles from Melbourne. Note the tender exhaust from the steam turbine which drives the firing equipment. (Courtesy Victorian Railways.)

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WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

S.A. NARROW-GAUGE CONVERSION

Project Hastened

Work on the gauge-conversion project in the south-east of South Australia is progressing steadily. The official opening of broad-gauge passenger and freight services to Naracoorte is scheduled for February 1.

Work is consequently being concentrated for the present on the section between Wolseley and Naracoorte. According to Mr. R. B. McMillan, of Melbourne, who visited the district at the beginning of December, the position then was that the new rails and sleepers had been laid over the whole of this section, except for two or three lengths of about two miles each. Most of the station yards had been completed with third rail throughout, but Naracoorte — although new platform faces and loco. ash pits had been started — still has a fair amount of track reorganisation to be done. At several places new culverts must be installed, but materials were on hand awaiting installation.

Extensive Mixed Gauge

The 50-odd mile section from Wolseley (present transfer point between broad and narrow gauges) on the main Adelaide-Melbourne line to Naracoorte is being relaid as three-rail throughout, including all loops and sidings at wayside stations. From February 1 all passenger trains will run through on broad gauge ex Adelaide to Naracoorte, which will become a temporary break-of-gauge station for passengers. Freight traffic for stations to and inclusive of Naracoorte will also work through on broad gauge. However freight traffic for stations beyond Naracoorte will continue for the present to be transhipped to and from narrow gauge at Wolseley, so that at least until broad gauge has been extended to Mount Gambier, both broad and narrow gauge traffic will be worked between Wolseley and Naracoorte, which will be an interesting feature, although not without precedent in South Australia.

Increased Traffic

According to Mr. McMillan, freight traffic appears to be increasing year by year at a steady rate. With more industrial enterprises now developing, or planned, in the South-east and particularly in the Mount Gambier district, this trend is likely to rise sharply within the next decade. The present volume of traffic demands at least two freight trains each way daily on the main line; indeed there might be more if sufficient motive power, rolling stock and transfer facilities were available. The extension of the broad gauge may well encourage a faster expansion of the district generally, which is already one of South Australia's most productive.

Branch Lines

The Kingston branch from Naracoorte too, is handling a steadily increasing volume of freight traffic. However, its track is of a generally low standard and if not converted to broad gauge fairly soon, may have to be completely resleepered and relaid with heavier rails. It appears more likely that the former course will be adopted, particularly in view of the S.A. Government's intention to develop a deep water port somewhere in the vicinity. The Millicent and Glencoe branches are also to be converted to broad gauge. Ballast for the reconstructed main line is derived from a quarry near Tantanoola, on the Millicent line, and a direct connection has been provided at Mount Gambier Junction for the ballast trains.

NEW LOCOS, ORE CARS

For Silverton Tramway

Australia's most profitable private railway—the 34-mile, 3ft. 6in. gauge Silverton Tramway Company's line connecting Broken Hill, N.S.W., with Cockburn, S.A.—is buying new locomotives and rolling stock to meet expanding traffic requirements.

Two new 4-8-2 locomotives have been ordered in England from Beyer Peacock & Co. for 1950 delivery and a further 30 standard bogie S.A.R.-type On-class ore cars have been ordered from the South Australian Railways. The S.T.C. already has 55 of these modern all-welded 33-ton capacity cars in service, all built by the S.A.R. with which they are interchanged in through ore and concentrates traffic between the Barrier mines and Port Pirie, S.A. smelters.

The new locomotives — S.T.C.'s first for many years — are its first eight coupled machines, and are substantially the same as the new W-class 4-8-2's being built by Beyer Peacock & Co. for the Western Australian Government Railways. (See July, 1948 issue.—Ed.) They have two outside cylinders 16 in. x 24 in. 48 in. dia. coupled wheels and with 200 p.s.i. boiler pressure will develop 21,760 lb. tractive effort at 85 per cent. rating. Leading bogie, trailing truck and tender bogie wheels are all 30 in. dia.

The heating surface and estimated roadworthy weights, wheelbase and length over couplers are all identical with the W.A.G.R. design. The boiler has a Belpaire firebox with two arch tubes and is 16 ft. between tube plates and pitched 7 ft. 6 in. above rail level. The locomotives have Walschaert's valve gear actuating piston valves. (The present S.T.C. A-class 4-6-0's are possibly unique as being superheater locomotives with slide valves.—Ed.)

The bogie tender has space for 7 tons of coal and 2,500 gallons of water. In view of the increased wheelbase of these new locomotives, new turning facilities may have to be installed at the S.T.C. Broken Hill depots at Railway Town and Burns (opposite Cockburn on the N.S.W. side of the border).

In view of the importance of the Silverton Tramway Co. as the connecting link between the Barrier mines and the South Australian Railways, it enjoys what is virtually a monopoly of the valuable ore and concentrates traffic. With world metals prices still at a high level, Barrier mines have been increasing production since the war, but owing to coal shortage and motive power and rolling stock deficiency, the transport of concentrates has been unable to keep pace with demand, leading to stockpiling on the mine leases. Because of this and the increasing age (and therefore maintenance cost of existing motive power) the S.T.C. was faced with a dilemma whether to carry on indefinitely with its existing plant or buy new equipment despite the probability of early Commonwealth Government action to provide standard gauge between Broken Hill and Port Pirie in association with the South Australian Government.

WATTLE PARK

FOR THE FINEST SPORTING 9-HOLE GOLF COURSE IN MELBOURNE. TRAM FROM BATMAN AVE. (ROUTE 70)

V.R. GIPPSLAND DUPLICATION
Progress Report

Inspection of the work of duplicating and regrading the line for Up traffic between Yarragon and Longwarry on the main Gippsland line of the Victorian Railways reveals rapid progress with this major work.

Following the completion by the contractors of the major portion of the earthworks between Drouin and Warragul, work of consolidation, drainage, ballasting and tracklaying has been concentrated between these two points. Track has been laid on the new formation for about one mile east of Drouin, and for about two miles west from Warragul. Work is being pushed ahead to join this new single line on the new formation and grade to allow working of single engine loads in the Up (westbound) direction. Some delay has occurred due to the strong flow of water from several springs tapped in the excavation of the 80 feet deep cutting near the summit, which has been eroding the embankment away where the water flows out of the cutting. Remedial drainage measures and warmer weather seem to have contributed to overcome this difficulty, at least temporarily.

Tracklaying and ballasting are being energetically pursued. The new "Matisa" ballast tamping machine is being used, together with a variety of power shovels, rooters, front-end loaders and scrapers, and the now ubiquitous bulldozer in association with motor trucks for transport of filling. Rail used is new welded 94 lb. laid on sleeper plates and well anchored.

Drouin station will be provided with an island platform with the new Down line located north of the present platform. The overbridge at the Down end will be extended over the new line. As soon as the new Up line is available for traffic it will be temporarily used as a single line between Drouin and Warragul whilst the present line (to become the Down line) is relocated and slewed where necessary. Some regrading is being undertaken near the summit of the bank to make the grade a momentum one for Down trains.

Automatic signalling using searchlight colour lights will eventually be provided throughout the duplication, but initially on the Drouin-Warragul section arranged for a six minute headway for Up trains. Automatic colour light signalling will also be extended from Oakleigh to Dandenong, and eventually to each section as the line is further duplicated.

The west end of Warragul yard is at present being reorganised and the signalling and interlocking altered. A new loop siding will be provided to enable Down empty trains to run around passenger trains and without entering the yard tracks on the Up side. The present auxiliary signal box at the Up end will be retained for the time being with the necessary main line signals slotted from the main signal box at the Down end. Provision is being made, however, for central electric-operation and interlocking of all points and signals from the main box in the near future.

The contract for the earthworks for the duplication between Longwarry and Drouin was recently let to Roche Bros. who have nearly completed their contract between Nilma and Yarragon.

AROUND AUSTRALIA
News from the states

Queensland

Only the first ten of the thirty Beyer-Garratt locomotives on order for the Queensland Railways will be built by Beyer-Peacock & Co. According to latest information, the remainder will be built in France by the Societe Franco-Belge (Beyer-Peacock's associated French company) which built a series of Garratt locomotives for Tunisian Railways before the war.

A further 15 (not 25 as stated in December issue) class BB-18¾ Pacifics have been ordered from Vulcan Foundry Co., making 35 in all. The first 20 are to be delivered by February, 1951, and the balance by May of that year. As already announced in an earlier issue, the design will be a modernised version of the successful 1925, B-18¾ class.

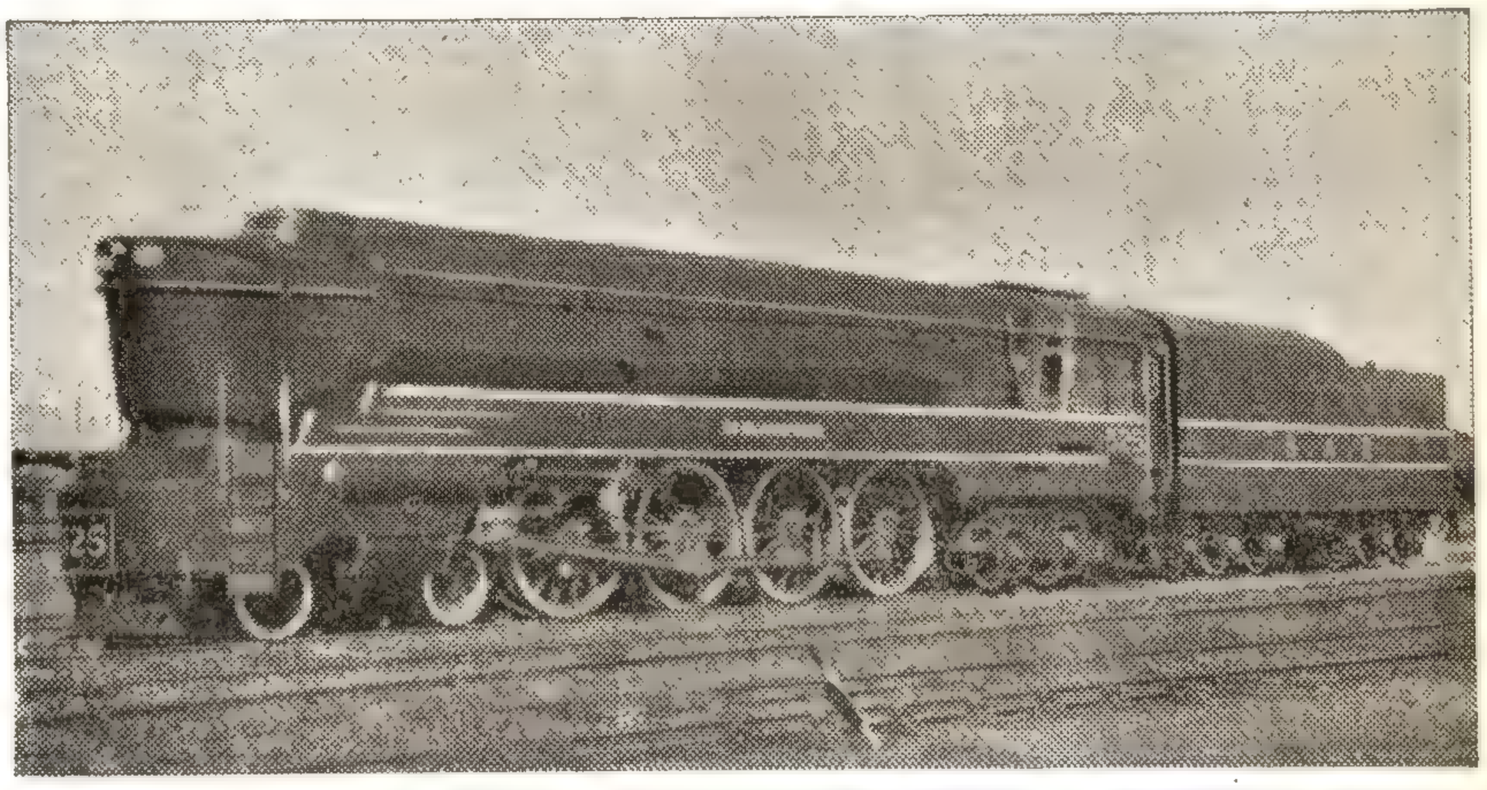
According to Mr. G. Parker, Rocklea, B-18¾. No. 911 is running in the new hawthorn green and imperial carmine colours, with the air compressor mounted lower than formerly, but in the same position. Mr. K. Rogers advises that Clyde-built, C-17 engines, recently delivered (see December issue), apparently have consecutive builder's numbers in order of delivery despite their road numbers being out of sequence. He cites No. 929 as Clyde's 494, and No. 936 as Clyde's 499, in support of this. No. 935 is Clyde's 503 and No. 938 is Clyde's 502, according to Mr. Eric Lindsay.

Mr. Rogers also mentions that Moreton Central Sugar Mill at Nambour have rebuilt the two former Mapleton Shire Tramway "Shays," into one good engine, painted green and lined in red, but so far not named. A complete new steel cab with circular lookout at the sides has been provided, altering the appearance considerably. The boiler bands are picked out in red and it looks "very spic and span."

Both Mr. Rogers and Mr. E. Lindsay of Toowong, report that the Kuraby duplication (South Coast line) is proceeding apace. A new station and signal box (pre-cast reinforced concrete) have been built at Kuraby and a platform is under construction at a new station to be named Runcorn. No rails have been laid as yet, but the earthworks have been almost completed and a new wye (triangle) has been installed at Kuraby for turning engines.

According to some reports, Brisbane suburban electrification is definitely decided upon and an announcement will shortly be made. The Q.G.R. plans the erection of new workshops (per-way, signal and interlocking) at Northgate, where space has been set aside for a new marshalling yard and locomotive terminal, between Northgate and Virginia. The present Mayne yard and locomotive depot are in an area too restricted for much future expansion and it is possible that, after electrification, the principal Brisbane locomotive centre will be relocated at Virginia. As part of the expansion and modernisation plan, the Government plans ordering a further £A11 million worth of rolling

Engine Pictures



The "Pocono," or "Northern" type 4-8-4 locomotives of the 520 class, South Australian Railways, are always a fine subject for the camera, as this view of No. 526, by David Burke, proves.

625

stock early in the new year, which will include electric multiple unit cars.

Mr. Lindsay records that DD-17 (4-6-4 Tank), No. 949 was painted blue, similar to the rest of the class, recently. No. 953 of this class (Ipswich No. 203 of 1949) is in service. B-18¼, No. 28 has had sliding windows fitted to the inside of the cab, which is one of the old type fitted to the earlier series Pacifics. A number of locomotives in the Brisbane area have recently had their class stencilled on the front engine headstock, similarly to Western Australian practice. Engines noted include all DD-17's, some D-16's and D-17's. Former side door suburban car No. 387 has recently been converted to a Westinghouse brake instruction car. New C-17 class locomotives Nos. 958-960 went into service on Northern Division prior to September 30, 1949. C-17's Nos. 937, 955, 956 and 957, are in service on Central Division. Nos. 930, 932 and 936 are on the Southern Division.

New South Wales

The Department is reported to be seeking tenders for ten diesel-electric road-shunting engines of from 750-1000 horsepower rating. Specifications call for suitability for passenger or freight service on secondary lines with grades up to 1 in 40 and maximum speed on level tangent track of 45 m.p.h. Fuel tank capacity sufficient for 500 miles, roller bearings and an axle load not exceeding 20 tons are other requirements.

A correspondent reports that Southern Portland Cement Co. No. 2, arrived at Eveleigh shops late in October last for overhaul. This locomotive was originally N.S.W.R. No. 2603, a 2-6-2 saddle tank. No. 5801 was reported almost ready for road trials before Christmas and should soon be joined by No. 5802.

Following the decision of Courtaulds Ltd. to build a rayon factory at Tomago, near Newcastle, the Government will provide railway facilities in the form of a private siding to serve the new industry. This will involve bridging the Hunter River near Hexham, which work is already being undertaken. Local interests want the line extended at least as far as Raymond Terrace and opened for public traffic.

Victoria

Late in November the Commissioners of all the Australian railways and the General Manager of the New Zealand Government Railways met in conference in Melbourne for the first time since before the war. Previous conferences have been held in Sydney and Perth. The Victorian Commissioners acted as hosts in giving the visitors a demonstration of the dust-fired, X-class engine No. 32 in action.

The Department has sold three of the ten six-coupled, 350 horsepower diesel-electric shunting locomotives on order from English Electric Co. to the State Electricity Commission Mr. T. Cox, of Auburn, and other correspondents report oil-fired A2, Nos. 964 and 955 as fitted with a new type cylindrical fuel tank with a ladder to reach the filler. Malcolm Moore Pty. Ltd., Engineers, Port Melbourne, were successful tenderers for a travelling grab coal bridge to be installed at North Melbourne locomotive depot.

In view of traffic requirements, particularly on the Gippsland line, and the probable delay in completing electrification, consideration is being given to immediate construction of a further series of twenty X-class heavy 2-8-2 freight locomotives.

Extension of the grain elevator system of bulk wheat handling on Victorian Railways lines, extending into the Riverina district of New South Wales was recently advocated by district representatives at an enquiry by the Victorian Parliamentary Public Works Committee which is investigating the proposals.

The pulverised fuel-fired X-class, No. 32, has completed testing on the Bendigo "test track" and after Christmas will enter regular freight service on the Gippsland line, operating between Yallourn and Melbourne. This will enable refuelling at Yallourn; reducing fuel transport and storage to a minimum. Owing to the present inability of the State Electricity Commission to supply more "dust," the second set of dust-firing equipment is unlikely to be installed for some time to come.

"Alambi"—first V. & S.A.R. joint stock air-conditioned roomette sleeping car was opened for exhibition to the public at Spencer Street station, on December 10.

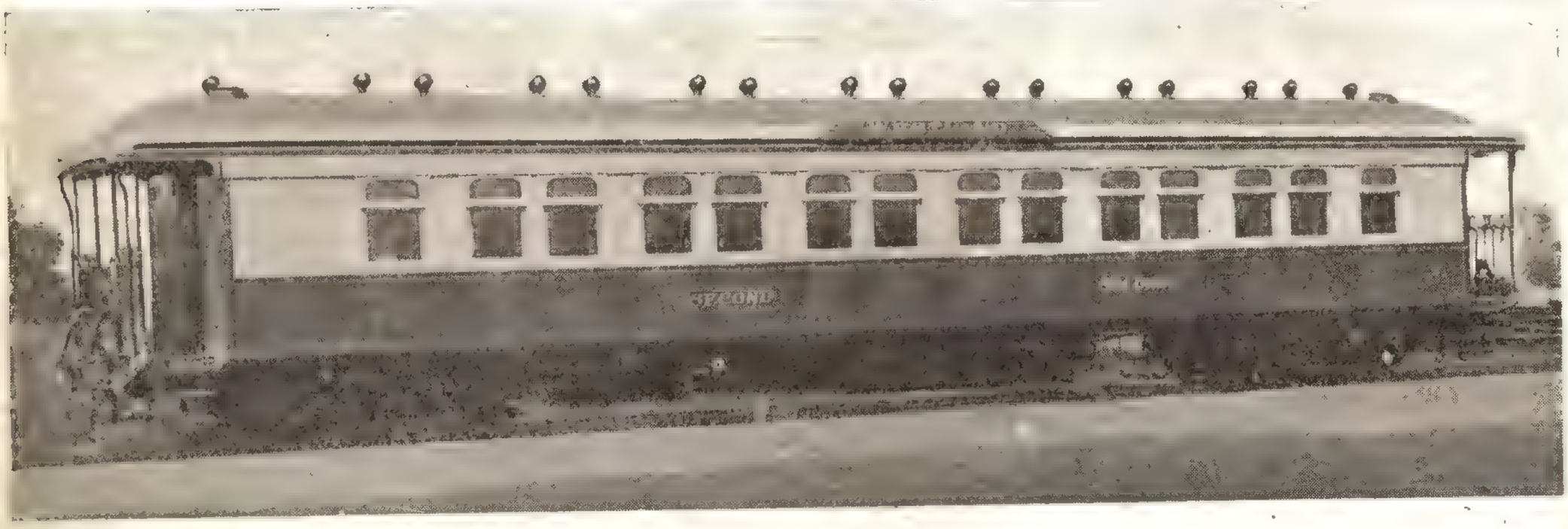
South Australia

Early in 1950 the S.A.R. plans to provide a converted modernised saloon type passenger car with reclining seats on the narrow gauge Peterborough Division, for service between Terowie and Quorn. By the end of the year the provision of air-conditioned reclining seat cars on all main country lines and "The Overland" to Melbourne is contemplated. The former Pullman dining car "Adelaide" is being reconditioned for use on the daily "Blue Lake Express" to the South-east. Later it may be restored to service on "The Overland."

S.E.C. Switchers

State Electricity Commission of Victoria has bought three of the ten 350 b.h.p. diesel-electric shunting locomotives on order for the Victorian Railways and being supplied by English Electric Co. They are intended for use at Newport power station. Bearing Service Co. were successful tenderers for supply of roller bearings for new 33-ton coal cars and 32 cu. yard overburden cars for the Morwell open cut electric railway. Tenders for the cars and electric locomotives for this project are being examined.

Rolling Stock Parade



Continuing the series of pictures of views of passenger cars of the West Australian Government Railways, this month brings us to the ARS class, a second-class sleeping car, used on the Westland, and other long runs. These cars, 15 of which are in service, provide fully-equipped berths for 24 passengers. Dimensions are: Length over buffers, 61ft. 9in.; width overall, 8ft. 9¾in.; weight, 27 tons 12 cwt. Converted for daytime travel, these cars seat 52 passengers.

(Courtesy W.A.G.R. Institute Magazine.)

ELECTRIC TRACTION

TRAMWAY — TROLLEY BUS — ELECTRIC RAIL

Formerly published separately as "Tram Tracks"

The only ballast motor operated by the Municipal Tramways Trust, Adelaide, S.A., this car, now scrapped, was converted from B class open toastrack No. 38.

(From an official print.)

(One of nearly 200 interesting types illustrated in the Australian Tramway Album.)

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

Melbourne — Victoria (M.M.T.B.):—

Car No. 165 (ex M.B. & C.T.T. built 1916) has been transferred back to the main system from the Footscray isolated routes, where it was sent in 1941. It has subsequently undergone its fourth alteration, this time reverting to the single front-entrance for 1-Man operation. At the same time, the 1000 gallon flusher and scrubber car No. 8, has been sent to Footscray for several months. This is the first scrubber to visit the lines since the original No. 8 (formerly a P. & M.T.T. passenger car), went there in 1934. As a prelude to the forthcoming P.C.C. equipped car; "Semi-luxury" car No. 840 (class SW5), has had its drop-centre seating replaced with upholstered longitudinal seats against the sides; 840 re-entered service during December, 1949. The Public Works Committee has approved both the proposed Footscray link from Maribyrnong and the planned Hawthorn-Camberwell diversion. It is expected that parliamentary authorisation will be sought during the next Session — about Easter, 1950. There are now only a couple of W2 cars left with the upholstered seats in the saloon. Cars 329-337 were so fitted in 1929 as an experiment. Work is going ahead rapidly on the rehabilitation of the St. Kilda Beach via South Melbourne route tracks. This was the first major route opened after the formation of the Board. A works program, costing over £240,000 up till June, 1952, has been authorised, and it is hoped that 35,000 feet of track will be overhauled as well as many points and crossings.

Once again shortage of materials has held up the Latrobe Street route, and the finishing date has been advanced to Easter, 1950, when it is expected that the Bourke Street electrification will commence.

Melbourne — V.R. Tramways:—

It is expected that no decision will be made on the future of the lines until a new all-embracing Transport Department will be set up about the middle of 1950. In the meantime, the promised rehabilitation of the road surface has been put under way, and several original span poles on the Brighton route have been replaced. Mr. Guye has replaced Colonel Kent Hughes as Minister for Transport, and we take this opportunity of expressing our appreciation of the latter's fair and efficient administration. Col. Kent Hughes has entered Federal politics.

Sydney — N.S.W.:—

The first stages of the new Commissioner's program of overhauling Sydney's transport has taken effect. On 5/12/49 trams ceased running beyond Dover Road on the Watson's Bay route, and through buses from the closed section were run to the city express. On 19/12/49 the second section of the Watson's Bay service was closed from beyond Rose Bay and on the same day, the Ryde line trams terminated at Gladesville and Ryde buses, which took over, run express to the City. It is thought that the Abbotsford line beyond Fivedock will be next closed. Since the introduction of buses beyond Rose Bay, it is no longer necessary for Port Macquarie Depot to supply the route with cars at peak periods. Results of the campaign to eliminate "fare-dodgers" by the provision of either extra trams or the use of "glamour girl" conductresses at city stops, are said to be satisfactory. For the year ending June, 1949; financial results of the D.R.T.T. showed a loss of £272,008. Trams carried 309,757,000 passengers and earned £4,821,976. The buses

THE AUSTRALIAN

ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone: LF 1665)

If outside Victoria, communicate with the nearest representative:

ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND: Mr. D. Fallwell, 3 Matai Rd., Devonport, N.Z.
CHRISTCHURCH: Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON: Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON: Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.

NEW MELBOURNE CHAIRMAN

Brigadier R. J. H. Risson, C.B.E., D.S.O., E.D., B.E., M.I.E. Aust., assumed the chairmanship of the Melbourne and Metropolitan Tramways Board on October 1 last. In so doing, he justified the hopes of many that Mr. Bell's successor would be an engineer and an ex-serviceman. Born 48 years ago. Mr. Risson commenced his association with the engineering profession when he graduated from the University of Queensland, and joined the Transport Department of the Brisbane City Council at the age of 22. Ten years later he became a "spare-time soldier" in the Engineers. Following the outbreak of war, Mr. Risson left his desk to command the 2/3 Field Coy, R.A.E., subsequently being promoted to be C.R.E., first of the 7th, and then the 9th Division. A "Tobruk Rat," Mr. Risson was wounded severely, received two decorations, and was twice "mentioned." Further promotion to C.R.E. 2nd Corps (later 1st Corps) followed, together with the award of the C.B.E.

In the transport sphere, Mr. Risson achieved equal success, having latterly been Deputy-Manager of the Brisbane City Council Transport Department and Acting-Manager during the absence abroad of Mr. Quinn. Mr. Risson's latest appointment is a fitting tribute to his ability and we look forward to his term of office with interest.

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carried about half the tramway figure.

Brisbane — Queensland:—

A small profit was made during the last financial year. The trams carried 125,586,807 passengers and earned £1,514,324. Revenue per car mile was 36d. compared with buses at 23.3d. Services will be reduced after 8 p.m. and routes having previously an 8 or 10 minute headway will now have a 10 or 12. Fifteen minute headways will be increased to 20 minutes. This is said to be part of an economy drive to meet losses occasioned by recent coal strikes and wage increases. Revolutionary changes in Brisbane transport have been recommended by the General Manager after his visit to English, American and European transport systems. The most important point made is the retention of the newest types of trams as the major means of local mass transportation, to be supported by diesel buses, and in the more hilly districts, by single-deck trolley-buses. The Petrie Bight undergrounding for trams should be expedited, Mr. Quinn said; and noise reduction features in trams will continue to be introduced.

Adelaide — South Australia:—

All tram stop poles will be numbered, the M.T.T. decided recently. Instead of extending the Findon tram service to the fast developing Grange area on the coast, it has been decided to install a trolleybus service, branching off the Port route at Hindmarsh, and will be 6.9 miles long. A portion of the Findon tram route will be removed.

INVERCARGILL, N.Z.—

The most southerly system in the British Empire has decided to go bus. The City Council will apply for a loan of £137,050 for 17 diesel buses. The system was opened in 1912 and, at maximum extent, had 7½ m. of route. There are 16 S.T. one-man trams, six of which are of the Birney type, built in 1922. Routes operate to North, Georgetown, South; while the Waikiwi line was pruned back to Gladstone Street in 1946. Most of the layout is single-track.

OVERSEAS NEWS—

Twenty new cars are to be built for the progressive Blackpool Corporation. A streamlined experimental P.A.Y.E. car (No. 701) has been placed into service in Copenhagen, Denmark. It is a D.T. car with three entrances, but is of short length, seating 30 passengers and standing another 63. Fifty new P.C.C.'s are to be built at a cost of 1½ million dollars for the twin cities of Minneapolis-Saint Paul. The Ministry of Transport has asked the Liverpool Corporation to suspend further conversion of tram routes after the completion of the first stage in 1950. A five-year traffic improvement plan for Warsaw-Poland rement plan for Warsaw, Poland, requires 500 new trams. A locally built P.C.C. car has been placed in service at the Hague in Holland. It resembles U.S. models, but sports the typically continental pantograph. Fourteen new double-ended M-U P.C.C.'s have started running on inter-urban routes in Philadelphia.

One of the famous "Feltham" type London trams (class UCC), has been on trial in Leeds, and the authorities are anxious to purchase 100 or them. The decision rests with the new General Manager. The Leeds Transport Department has completed the Belle Isle extension to Middleton, and there is now an alternative route to that area allowing a through round service.

The Rotterdam Electric Tramways has ordered 35 new single-deck, single-ended trams, capable of hauling trailers when required. Each car will be rated at 272 H.P. and will be driven by a "propellor-shaft" drive through hypoid gears.

LATE NEWS—

The Victorian Government hopes to empower as soon as possible the construction of a diversion route in Melbourne, from Power Street on the Hawthorn route along Burwood Road, thence down Camberwell Road to the junction with Riversdale Road. The distance is 1.89 m. and the estimated cost is £138,000. The route will carry a ten-minute basic service, extended to five minutes at peak.

HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

V.R. ELECTRIC LOCOS.

The closing date of tenders for the 17 or, alternatively, 25 electric locomotives for the Victorian Railways has been extended from 30th November to 21st December. Some details of these locomotives have been published already, and further particulars have become known as follows.

The locomotives are to have a maximum safe speed of 75 m.p.h., and will each exert a starting tractive effort of 45,000 lb. with provision to increase this effort temporarily to 47,100 lb. by means of a switch under the control of the driver. With two locomotives operating in multiple-unit, it will be possible to lift an 1,100-ton train from rest on a 1 in 50 grade.

Both air and regenerative braking are to be employed, the air brake being applied to all wheels. The braking system is A-7-EL, which gives independent locomotive and automatic train applications. Rail sanding arrangements are that the leading sides of all wheels are to be supplied under air pressure, the actual control being electro-pneumatic, so that all driving wheels on both locomotives will be sanded when operating m-u.

The control system will be electro-pneumatic, the operating current being supplied by a motor-generator with 115 volts output. The power bogies will have a maximum wheelbase of 14 ft., will be fully compensated, and have all journals fitted with roller bearings.

Many fittings are to be provided in the cabs to ensure the comfort of the crew. These include cab heaters, sun visors, windscreen wipers, and clothes lockers. Instruments to be provided include ammeters, speed indicator and recorder, and a cyclometer to record the total locomotive mileage.

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HERBERT SMALL (Vic.) Pty. Ltd.

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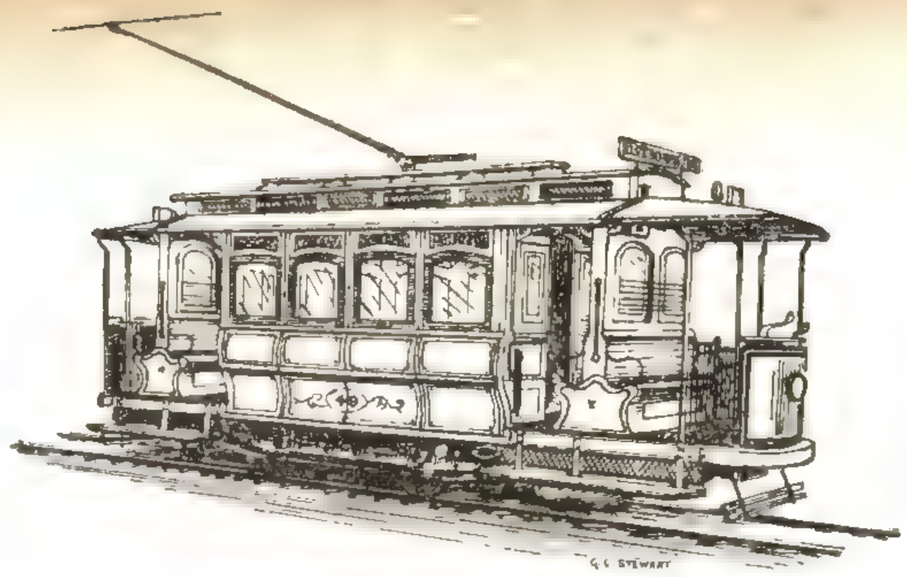
AUCKLAND TRAMWAYS
A Brief Survey

By G. C. Stewart



First tram built in Auckland was No. 49, this sketch of which is used by the author on his letterheads. No. 49 appeared in 1905, and was the sole representative of the D class.

ROLLING STOCK

All the Auckland trams now in service are bogie, single-deck, totally enclosed vehicles, weighing, on the average, 16½ tons. They are painted in a bright red which soon dulls. There is no lining-out, but the many windows — some cars have as many as 36 — are bordered with a yellow-brown. Numbers are carried on dashes and on the sides, which also have the Board's involved-looking monogram. Significantly, perhaps, that monogram has been simplified for the few Board motor buses. Unlike British systems, the name of the General Manager does not appear on the lower side panelling. If it did, it would be C. R. Gribble, styled Manager of the Board.

There are no route numbers, but each car carries four indicator boxes. A pair is placed at each end of the vehicle in the form of a vee. Nearly all cars have thrown-over seats. No seats are upholstered.

Cars may be entered from either the front or rear, and most can carry 7 standees on each platform and 24 more inside. There are few combination cars.

All trams have two trolley poles. Apart from the streamlined and the 1929/30 classes, which are 8 ft., all cars are 7 ft. 6 in. wide. Average height is 12 ft. 6 in. Tyre dia. are 32-33 in. except on the E.M.B. truck cars, where they are 27 in. After the E.M.B. cars were built it was learned they broke the Dominion's height regulations.

Tabulated details about the cars given below are supplemented as follows.

Class A.

Scrapped in 1931, these cars were found to be so small (four wheel vehicles, 29 ft. 11 in. long and seating 32) that they were coupled in successive pairs, i.e., 1 and 2, 3 and 4, etc., and controllers on the inner end removed. Car No. 44, however, was linked to No. 49, the only D class car, and they made an odd-looking pair. The A. class cars had six windows, and their trucks were almost certainly Brush.

Class B.

These old cars — bogie, 40 ft. long — come out regularly during the rush-hours, and although slow run very sweetly. Because the tyres on the motorless axles are permitted to wear considerably more than those on the motored ones, the trucks have a somewhat maximum traction appearance. The cars are fitted with ten windows a side and are distinguished by smokers' sections, partly cut off by panelling, at each end. They are combination cars.

Class C.

These six cars were the only double-deckers in Auckland. In 1906 one of them lost a trolley in Eden Terrace, and people were killed. As a result, the cars were always regarded with some suspicion by the public, and were certainly not popular. The cars, which were open-toppers, were motivated by two Brush 1200 motors — one for each bogie. Later all the axles were motored with 1202's. The cars were 33 ft. 4 in. long and fitted with reverse stairs. Afterwards they became single-deckers. They were all scrapped in 1946, except for No. 38, which ten years before had been altered to a single-deck grinder car. All had six windows.

Class D.

This was No. 49, which was scrapped with the A's. It was a combination, four-wheel car with four windows. Details are not available, but it was undoubtedly similarly equipped to the A's.

Class E.

Still in service for rush-hour work; these cars are bogie, ten window vehicles, 43 ft. long, seating 56.

Class F.

No trace of this class.

Class G.

These were four wheel, eight window cars, and carried the numbers 61-63. Replaced by M class cars.

Class H.

Now rush-hour cars, they are 43 ft. 2 in. long, with 14 windows, and carry 56 seated passengers.

Classes I. J.

No trace.

Class K.

Four wheel cars with six windows, they carried numbers 66-69. M class cars replaced these.

Class L.

Similar to tramway-type cars on the former Takapuna Tramway, a steam operated line, which ran on Auckland's northern shore. They are 43 ft. long, with 10 windows and 52 seats. Now on rush-hour duties.

(To be continued)

DELAY REGRETTED

It is regretted that, owing to the extended holidays in the printing and allied trades, this issue has appeared well behind schedule.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

A.E.T.A. NOTES

MELBOURNE BRANCH

December Meeting.

Guest speaker at the December meeting was Mr. W. R. Pollock, M.I.Mar.E., M.V.I.E., who gave his eagerly-awaited lecture on the former cable tramways of Melbourne. As was evidenced by the questions asked at the conclusion of the lecture, keen interest was aroused among members of the audience. Taken very much for granted in modern days, the cable tramways actually formed a very complex undertaking, the problems of which were at least as involved as those of present-day electric lines.

January Meeting.

Our January meetings are normally of an informal nature, owing to the absence on holidays of so many members. On this occasion, however, a goodly number was present to hear Mr. F. W. Duckett's talk on his experiences in Brisbane during a recent visit. Delivered entirely without notes in his inimitable manner, Mr. Duckett's lecture afforded no little amusement as well as interest. The method of laying new track in Brisbane was of particular interest.

Interstate Visits.

Our President (Mr. C. L. Busch) and Joint Secretary (Mr. K. S. Kings) have been in Western Australia on a visit to the tramway systems of Perth, Fremantle, and Kalgoorlie. Mr. L. Marshall-Wood has been on a similar visit to Tasmanian cities, and their return is awaited with considerable interest. We are particularly grateful to the transport undertakings which undertook to afford facilities for their visit.

PROPOSED BRISBANE BRANCH

If sufficient support can be obtained, it is hoped to form a Brisbane Branch of this association. Those interested should get in touch with Mr. F. A. Andrews, 34 Stephens Street, Morningside.

Mr. Andrews, a new A.E.T.A. member, was formerly a member of the Light Railway Transport League, our English affiliate.

BENDIGO TOUR

The combined railcar-tram tour to and around Bendigo will take place as soon as possible, probably on March 18. The exact date is uncertain, owing to lack of a firm reply from the Railway Department, and intending passengers should keep in contact with the secretary or treasurer of the Melbourne Branch.

Watch this page for further details.

SPECIAL CAR TOUR

Arrangements are in hand for the Fourth M. & M.T.B. Special Car Tour, and full details will be published as soon as possible.

Letters to the Editor

BROAD GAUGE CHAMPION

The Editor,
Railways in Australia.
Dear Sir,

With reference to Mr. Buckland's letter (R. in A., 6/49) in response to my letter in defence of the Broad Gauge, I should like to point out that I am **not** an expert on railways. I am only an innocent (?) bystander who happens to have a soft spot for the old Broad Gauge. However, after much consideration, I feel that I cannot let some of the statements made in Mr. Buckland's letter pass unchallenged.

In his letter, Mr. Buckland states that "on properly laid and maintained track, track gauge is of relative little consideration as between the limits of 3 ft. 6 in. and up to 5 ft. 6 in. gauge." Later he infers that, as more than 50 per cent. of Australian track mileage is sub-standard, 3 ft. 6 in. gauge is ruled out of being in the running as the Australian Standard Gauge. This attitude to me rather savours of running with the fox and hunting with the hounds.

The argument that 4 ft. 8½ in. must be best because "practically all the world's major high speed trains, steam, diesel, or electric powered, run on standard gauge track" will not hold water. England adopted this gauge because it happened to be the gauge of the old tramroads when steam traction was introduced. Railways were introduced to Europe and America from England and the odd English gauge of 4 ft. 8½ in. introduced with them. The fact that these countries now operate the fastest trains is not because of track gauge, but because they have developed their rail systems to a greater extent than other countries in order to cope with their industrial development, thereby providing the scope for higher speeds.

Before closing, I should like to ask Mr. Buckland on what authority he states: "The protagonists of the Irish Gauge were, in the first instance, responsible for the chaotic muddle of track gauges"? Every history book I have read tells a different story, namely that it was a protagonist of the English Standard Gauge who broke up the three-state agreement to adopt 5 ft. 3 in. as the Australian Standard Gauge. In closing, I should like to point out that we Broad Gauge enthusiasts (yes, I have got some friends!) do not claim that the English Standard Gauge is faulty; our main point is that the 63 in. gauge is just 11½ per cent., or 6½ in. better.

Yours etc.,
A. D. LOCKYER
Barmera, S.A.

NARROW GAUGE UP NORTH

The Editor,
Railways in Australia.
Dear Sir,

I have just returned to Australia after eight months overseas and have ploughed enthusiastically through the pile of "Railways in Australia" that awaited my return.

The first point I should like to mention is the origin of the illustrations on page 20 of the July issue and page 6 of the September issue. The little Shay in the July number is,

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as Mr. Ray Bruce remarked in the October number, one of the two owned by the erstwhile Mapleton Tramway. The block in question was used to illustrate an article on this line written by myself late in 1940, and which appeared in "Truck and Bus Transportation" shortly afterwards. I took the original snap on the 14th November of that year while the engine was standing beside the water tower in Mapleton Yard. Further particulars, taken from the actual engine are as follows: Cylinders, 10 in. x 6 in.; length over beams, 22 ft. 8 in; overall width, 6 ft.; weight, 14 tons; wheel diam., 2 ft.; truck wheel base, 4 ft.; outside diam. of boiler, 2 ft. 5 in. Working pressure reported as 200 lb. per sq. in. I made several attempts to count the gear teeth and believe that the numbers were 16 and 33 teeth, which would be about the correct ratio for the size and type of engine. The extra tooth on the road gear is to give a different meshing for each turn of the wheel to obtain more even wear.

This engine was the second Shay on the line and was bought in 1915 and named "Mapleton." She was built by the Lima Works in Ohio, U.S.A., and carried builder's number 4014. At present, "Mapleton," in rather a neglected state of maintenance, I regret to say, is hauling cane for the Moreton Central Mill.

The two illustrations of the Buderim Tramway were used to illustrate an article on that line, also written by myself, which appeared in "Truck and Bus Transportation" late in 1941. The photos were borrowed from a friend of mine, Mr. C. A. Blakey, who was a photographer on Buderim Mountain and later at Maroochydore. I am unable to give any dimensions of these engines except that the Shay's bunker was 7 ft. x 7 ft. x 3 ft. deep, with 12 in. radius corners. The Krauss is an 0-6-2T, now reduced to 2 ft. gauge and owned and operated by one of the sugar mills around Bundaberg.

It is great to read a magazine that deals with all phases of railway working. This subscriber, while interested in a general way in main trunk lines and standard gauge, is especially interested in the little narrow gauge roads "up country and outback" which provide him with a daily crust. Congratulations on past efforts and best wishes for a bright future.

Yours etc.,
E. M. LOVEDAY
Woura Park, via Torrens Creek, Qld.

SAFETY RECORD

The Editor,
Railways in Australia.
Dear Sir,

Reference October, 1949 issue, page 27, letter from Mr. H. J. Wright, Ashfield, New South Wales.

Your correspondent quotes:

"Especially when Australian railways, New South Wales in particular, have the highest safety record in the world."

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Yours etc.,
J. DOWNES.
Secretary Railway Publicity Committee
Perth, W.A.

"TRAM TRACKS" MISSED

The Editor,
Railways in Australia.
Dear Sir,

I was very sorry to find that "Tram Tracks" has now lost its separate form. As one interested in what goes on the other side of the world, I look forward with considerable interest to your magazine. You have, through many unfortunate difficulties, maintained a very high standard and I have no doubt this will continue. I should like to communicate my good wishes to you and hope that in the not too distant future we may again see the familiar cover of "Tram Tracks."

Yours etc.,
J. JOYCE
London, England.

WHICH ENGINE?

The Editor,
Railways in Australia.
Dear Sir,

Further to Mr. A. D. Lockyer's letter (R. in A., 12/49) re photograph of 720B-class engine published in the September issue.

In the Bulletin I received, the

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BOOK REVIEW

"NARROW GAUGE RAILWAYS OF BRITAIN"
By F. H. Howson
(Ian Allan Ltd.)

Of every conceivable gauge from 15 inches to three feet, and operating vehicles ranging from the ultra-streamlined to the incredibly ancient, British narrow-gauge railways have long fascinated the student of railway lore. This little volume, replete with illustrations and tabulated data, presents them in a compact and interesting manner. Electric railways appear, including, surprisingly, three underground lines.

(Our copy, Meadmore Model Eng. Co.—5/6.)

"MODEL RAILWAYS FOR THE BEGINNER"
By Ernest F. Carter
(Percival Marshall & Co. Ltd.)

Most of us have, at some time, admired one of those amazingly detailed, scenic, exact-scale model railways and have despaired of achieving similar results. In four slim volumes, Mr. Carter shows how it can be done, starting, if necessary, with an elementary tinplate outfit. Each book, whilst covering completely a particular aspect of the problem, leads the modeller quietly, almost imperceptibly, to the final stage of true-scale modelling.

(Our copies, McGill's Agency—4/9 per volume.)

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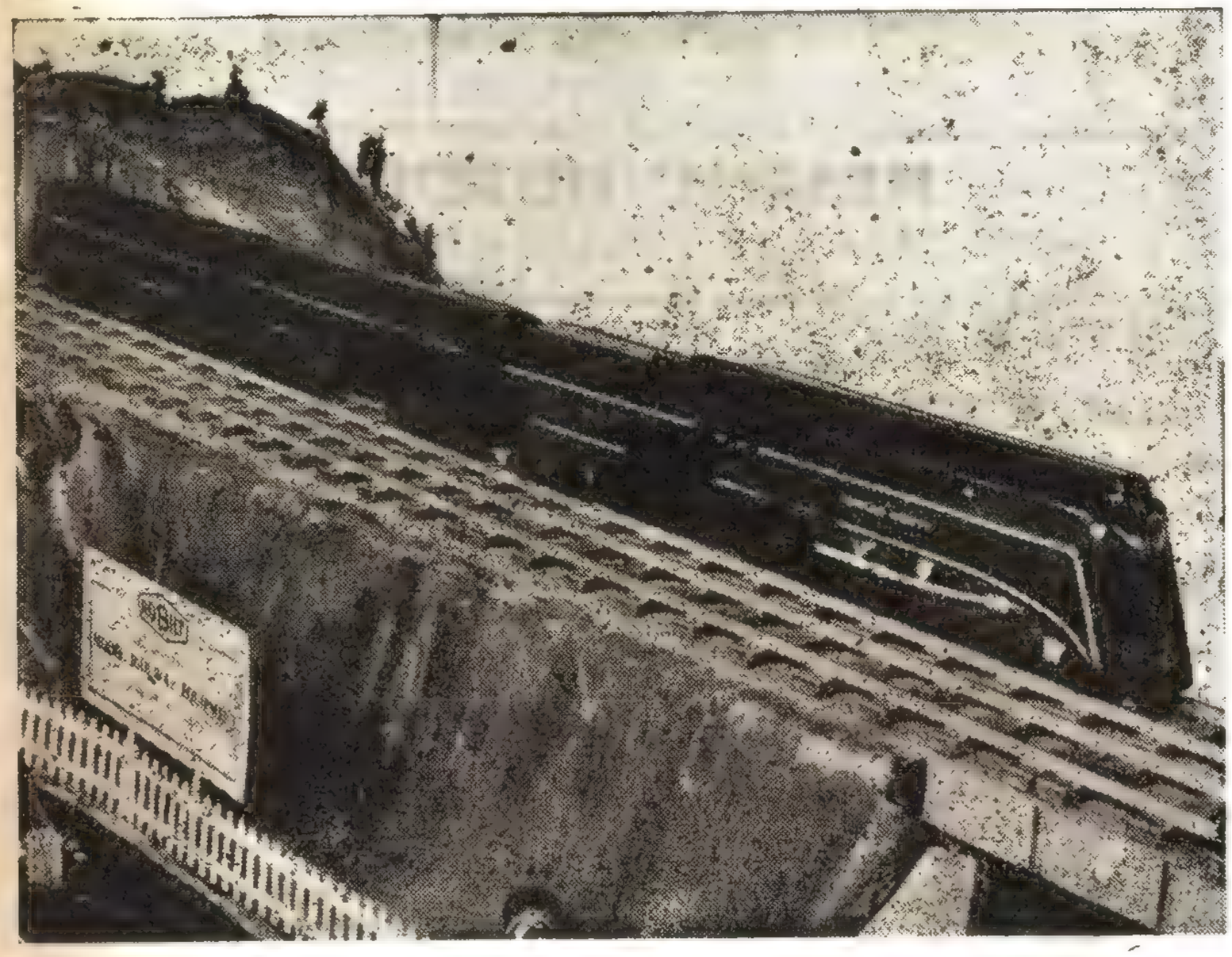

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number on the headlamp of the engine in question shows clearly that it is No. 733. This photo could not be of No. 720, as engines 720 to 724, inclusive, do not have skirting. Also, it could not be 727, as only 733 to 736, inclusive, have the type of headlight shown in the picture.

Yours etc.,
B. J. CASTLE
Brighton, S.A.

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

Mr. A. J. THOMAS, Concord, N.S.W., asks the following questions:
(1) What part, if any, of the Port Broughton Tramway, S.A., is still in operation?

ANSWER: The Port Broughton-Mundoora Tramway, 3 ft. 6 in. gauge, and 10 miles long, was opened in 1876 and closed on August 3, 1942. The "Fordson" tractor which provided the motive power in its later years may still be in use for haulage up the jetty.

(2) Was there at any time a tramway at Port Germein, S.A?

ANSWER: A 3 ft. 6 in. line runs from the main street, with spurs into various warehouses, down the jetty, which is the longest in South Australia (5,459 ft.). When first constructed in 1880 for the Marine Board the line was horse drawn, later it had a Kitson 0-4-0 tank loco., and finally, an ex-S.A.R. V-class, No. 144. The line was used mainly for haulage of wheat for shipment, but is now out of use as no ships call at the port.

(3) At Milang, S.A., what is the line, about ¼ mile long, running from the rear of the goods shed to a small wharf on the lake (3 ft. 6 in. gauge)?

ANSWER: This would probably have been for haulage of goods, as Milang was quite a busy place with Murray River shipping in the early days. It is fairly certain that there were no locos on the line — it was most probably horse-drawn. This type of line is quite a feature of many South Australian outports.

(4) Where does the Public Works Department's line at Moruya River, N.S.W. run from? What is its length and distance from Moruya township?

ANSWER: The line runs from Dorman Long & Co.'s quarry, near Pompey Point, to the breakwater at Sandy Point, a distance of 2.37 miles. It is used to carry stone to the northern breakwater, whence punts carry stone to the southern training wall. The line is standard gauge, and is worked by P.W.D. locos Nos. 30 and 78. Work commenced late in 1947 and is still in progress.

(The Editor of the A.R.L.H.S. Bulletin would appreciate any information regarding the previous history of this line.)

Fan Mail

W. W. STEWART, Auckland, N.Z.: Your photos among the finest we have seen; they will continue to appear from time to time. Thanks for the help.

PHILIP L. KEISTER, Freeport, Ill., U.S.A.: Thanks for letter; hope you find it possible to visit us one day.

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Railways in Australia

and

A.R.L.H.S. BULLETIN

The Magazine about Australian Trains

Incorporating TRAM TRACKS the Electric Traction Monthly

Published monthly by TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5, Victoria, in conjunction with the Australasian Railway and Locomotive Historical Society. and the Australian Electric Traction Association

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OUR COVER PICTURE

Seaside trains from Rockhampton at Yeppoon on the 3 ft. 6 in. Queensland Government Railways. The locomotives are C17 class, Nos. 765 and 821. Photographed by Ken. Rogers, in February, 1949.

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WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

Modern Sanding Arrangemcnts For V.R. Locomotives

Following the successful application of modified sanding arrangements to Engine 220, H-class, Victorian Railways plan to equip all X-class and modify the design of the new R-class (now on order), similarly. This involves the abandonment of between-the-frames sandboxes and substitution of a boiler-mounted sandbox located between the smokebox and the dome. The sandbox and dome will be incorporated in a single elongated housing, similar to the H-class modification. Concurrently sand delivery pipes will be provided in front of leading and second pairs of coupled wheels and in back of trailing coupled wheels for tender first operation.

General adoption of boiler top sandboxes will require modification of sand supply delivery at principal locomotive depots. In future any new coal elevators may include a compartment and delivery pipes for locomotive sand, as in South Australia.

This radical change in sanding arrangements for locomotives represents a revolution in the long-standard practice of the V.R. to conform with modern steam locomotive practice in this regard. Three classes of V.R. broad gauge locomotives — W, S and V — of American design, had this feature, as have the narrow gauge NA-class tank locomotives, also of American design.

S.A.R. Will Buy Ex-U.N.R.RA. Locos.

S.A.R. has completed negotiations with the Commonwealth Government to purchase ten 2-8-2 locomotives of the order being fulfilled for the Commonwealth by Clyde Engineering Co. They will be modified in the building for temporary use on 5 ft. 3 in. gauge and altered from right-hand to left-hand operation to suit S.A.R. requirements. It is understood the price is in the vicinity of £30,000 each. (The Commonwealth Government has fifty 2-8-2's of basic S.A.R. 710-class design on order from Clyde Engineering Co. They were originally intended for service in China under the auspices of U.N.R.R.A., but material shortage, strikes and other delays—and the winding up of U.N.R.R.A.—has so far delayed the construction that they may be completed in time for use on standard gauge lines in South Australia within the next ten years.——Ed.)

Launceston-Hobart Boat Train at Launceston Wharf, Tasmanian Government Railways, headed by an R class Pacific. Although not particularly fast, these trains provide a comfortable ride in all-steel cars, including a buffet car. Most boat trains now run to and from Burnie or Devonport on the north-west coast, these ports being more suitable for ocean-going steamers. Trem Watson of Sydney took this photo some years ago. (Block, courtesy Truck & Bus Transportation.) See article on page 5.

N.S.W.R. Adopting Bogie Freight Cars As Standard

As forecast in this journal some months ago, the New South Wales Railways have decided to abandon construction of further 4-wheel freight cars. Uncompleted orders will be cancelled and new orders placed for high-capacity bogie cars of gondola (open) and hopper types. Orders are already issued for additional M.L.V. (bogie louvre cars); P.H.G. (bogie freight brake vans); M.R.C. (bogie refrigerator cars), and bogie coal hopper cars. It is now expected that, in co-operation with the Joint Coal Board, plans will be evolved for replacement of obsolete colliery hopper cars with modern high-capacity continuous-braked cars.

More on S.A.R. Oil- and Dual Oil-Coal Fired Locos.

Latest advice from South Australia indicates that all locomotives listed in our October issue as converted to dual oil-coal firing have been reconverted to coal-burners during September, with the exception of the 500-B class 4-8-4's, two of which, Nos. 501 and 508, are full oil-burners. Engines of Class 700 and 720-B, also F-Class suburban tank engines remain as oil- or dual-fired engines. Rx-Class No. 9 was not converted to oil-burning as stated in error in October issue.

Accelerations, More Trains In N.S.W.R. Summer Tables

In the summer timetables, which became effective on November 27, the N.S.W.R. have speeded up the southbound North Coast Mail, the Riverina Daylight Expresses in both directions, the Federal City Express, and put the Forbes Mail back to a six-days a week service.

The 6.55 a.m. daily, except Sunday, North Coast Mail from Murwillumbah is cut by 40 minutes running time to arrive in Sydney at 6.20 a.m. next morning, instead of 7.0 a.m. The south bound Riverina and Federal City Expresses have exchanged paths ex Sydney — the Federal City leaves at 7.45 a.m. instead of 8.0 a.m. and the Riverina at 8.0 a.m. instead of 7.45 a.m. — and both are accelerated to reach Canberra at 1.37 p.m. and Albury at 7.25 p.m., respectively.

In the northbound direction, the Riverina leaves Albury at 8.50 a.m. as previously and is accelerated to arrive in Sydney at 7.53 p.m. On the Western line the 8.30 p.m. Forbes Mail previously restricted to running on Sundays, Tuesdays, Thursdays

and Fridays ex Sydney, goes back to six nights a week in each direction. The only deceleration appears to be that of the southbound Melbourne Limited Express, which starts ten minutes earlier at 8.0 p.m. ex Sydney.

Queensland Orders More Garratts: First to Run This Year

Following the recent visit overseas of the Chief Mechanical Engineer (Mr. V. Hall), the Queensland Railways have been able to arrange for Beyer, Peacock & Co. to expedite delivery of the first orders for Beyer-Garratt locomotives. The first 12 will arrive in July this year. Eight more will arrive in October and a further ten (making 30 in all on order) will arrive in January, 1951, the original date of delivery for the ten locomotives ordered in 1946. The Beyer-Garratts, which will be Queensland Railways' biggest motive power, will rate as 50 per cent. more powerful than the C-19 Class 4-8-0's; at present largest and most powerful type in service since the withdrawal after the war of A.S.G. locomotives from service in Queensland. The Beyer-Garratts will be finished in a shade described as "Midland red" in conformity with the colour schemes recently initiated by the Commissioner (Mr. T. E. Maloney). According to a Brisbane correspondent, No. 50 of Class B-18¼ (Pacific), has recently appeared in the new hawthorn green finish with imperial carmine trimming on engine and the tender side and polished brass boiler bands.

(We regret pressure on space this month prevents publication of further news items from Queensland correspondents until next month. —Ed.)

New S.A.R. Sleepers

The first of the air-conditioned "roomette" type sleeping cars built by the South Australian Railways went into service on "The Overland" between Adelaide and Melbourne on December 9. The remainder of the cars will be in service early in the new year.

V.R. Railcars

The first of 12 power bogies for Victorian Railways twin-car 280 h.p. diesel railcars was landed in Melbourne last month. These units will be of articulated type and will be used for main line "sweeper" service to enable steam-hauled trains to run express over longer distances. They are designed for a maximum speed of 60 m.p.h. First-class cars in these units will have reclining seats and fluorescent lighting will be installed throughout. First unit should be completed soon after Christmas.

Diesels for Tasmania

Tasmanian Transport Department has called tenders for supply of one diesel-mechanical, road-shunting, 350 b.h.p. locomotive. This will be of similar type to, but larger capacity than the successful V-class, Vulcan-Drewry, diesel-mechanical shunting

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MORE INTERESTING BOOKS FOR RAILWAY ENTHUSIASTS

"SECTIONAL MAPS OF THE BRITISH RAILWAYS." (54 pages, 9½ in. x 7 in., of clear maps and index of railway stations in England and Scotland; stiff cover.) **Price, 12/-.**

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"TRAINS ANNUAL" 1949 and 1950. (96 pages, 7 in. x 9½ in., of superb photos and interesting information about railways in Britain and elsewhere.) **Price, 10/6.**

"LOCOMOTIVE PRACTICE AND PERFORMANCE IN THE 20th CENTURY." (294 pages, 6 in. x 9 in., with wonderful action photos, dealing mainly with loco working in Britain, North America and Europe, with special chapter on train timing.) **Price, 32/9.**

"LOCOMOTIVES OF THE L.N.E.R." (95 pages, 5½ in. x 8½ in., of good photos of the locos of this system, complete with re-numbering supplement.) **Price, 7/6.**

"THE WORLD'S RAILWAYS—AND HOW THEY WORK." (317 pages, 5¾ in. x 8¾ in., of photos, sectional drawings and interesting details about railways in most parts of the world.) **Price, 13/-.**

"MODERN STEAM LOCOMOTIVES AND ELECTRIC TRACTION OF THE S.R." (32 pages, 8½ in. x 5½ in., of information and pictures in photogravure.) **Price, 2/3.**

"LOCOMOTIVE EXCHANGES." (176 pages, 5½ in. x 8½ in., gives details of locomotive trials done recently in Britain, to ascertain the most suitable of the former company engines, for working over all routes, now that the railways have been Governmentalised.) **Price, 17/6.**

"OIL-BURNING LOCOMOTIVES." (30 pages, 5½ in. x 8½ in., giving details and sketches of oil-burning equipment on British locomotives.) **Price, 2/9.**

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"LINE OF COMMUNICATION." (86 pages, 5½ in. x 8½ in., dealing with the operation of railways in North-East India during the recent war. Headaches and funny incidents for British and American operating staffs. Illustrated with good pictures in photogravure.) **Price, 8/6.**

"L. & S.W.R. LOCOMOTIVES." (96 pages, 5½ in. x 8½ in., with brief history of the system, also photos and details of locos used from 1873 to 1922.) **Price, 9/-.**

"S.E. & C.R. LOCOMOTIVES." (46 pages, 5½ in. x 8½ in., with photos and information of motive power used on this system from 1878 to 1923.) **Price, 4/8.**

"TITLED TRAINS OF GREAT BRITAIN." (204 pages, 5 in. x 7 in., with interesting information and good photos of famous trains in Great Britain.) **Price, 10/6.**

"LOCOMOTIVE ENGINEERS OF THE L.N.E.R." (76 pages, 5 in. x 7¼ in., giving the story of the famous men who designed the motive power of this system.) **Price, 4/2.**

"LOCOMOTIVE ENGINEERS OF THE S.R." (87 pages, 5 in. x 7¼ in., telling about the men who designed the motive power used by this company.) **Price, 4/8.**

"BRITISH PASSENGER LOCOMOTIVES" also "FREIGHT AND MIXED TRAFFIC LOCOMOTIVES." (Both of 128 pages, 5 in. x 7¼ in., with photos, brief history and details of most of important British motive power.) **Price, 4/2 each.**

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"KINGS AND CASTLES OF THE G.W.R." (71 pages, 5 in. x 7¼ in., giving the history, technical details, photos and performances of these machines.) **Price, 4/8.**

"RAILWAY DIGEST." (64 pages, 4¾ in. x 7¼ in., with up-to-date information about railways in most parts of the world. Published three times a year: March, July and November. Illustrated with photos, diagrams and sketches.) **Price, 3/-.**

"SEMAPHORE SIGNALS." (31 pages, 4¾ in. x 7¼ in., illustrated with photos and colour drawings. Explains signalling systems in Great Britain.) **Price, 2/3.**

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"BEST RAILWAY PHOTOGRAPHS" — No. 10, at 2/9; No. 11, at 2/4; No. 13, at 2/4; No. 14, at 2/9.

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"NARROW GAUGE RAILWAYS OF BRITAIN." (79 pages, 4¾ in. x 7¼ in., illustrated with good photographs of the various systems and small maps to show their location.) **Price, 4/8.**

"THE YOUNG LOCO MAN'S GUIDE TO THE FOOTPLATE." (128 pages, 5 in. x 7¼ in., with descriptive matter, sketches and diagrams to explain the working of steam locomotives and their equipment, also to describe British signalling systems and safe-working methods. Intended mainly for cleaners and junior firemen, but also useful to tutor lads who desire to learn how engines are worked.) **Price, 6/6.**

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locomotives already in operation. The Department is also seeking tenders for 238 four-wheel under-frames for freight cars.

V.R. Suburban Cars

Victorian Railways have announced their intention of testing public reaction to an experimental design of suburban passenger car of semi-saloon type, having three pairs of double sliding doors in place of the standard nine single doors per side. Only one car is being built at Newport at present, but if public reaction is favourable, more will be ordered. Seating has been rearranged and more standing room is available. Wooden partitions will be replaced by glass. Improved ventilation and lighting will be featured and straps for standees will be provided. The Commissioners announced last month that following experimental provision of facilities for "strap-hangers" in two standard cars, all new suburban trains will have this feature.

RECORD V.R. LOAD

Hauling the 1949 wheat crop has meant breaking records on the Victorian Railways. In one week recently, an all-time high of 3,369,000 bushels of bulk wheat was handled in 4,942 trucks. The greatest number of trucks moved in one week in a previous season was 3,571.

BIG LOADS

At least two trains exceeded 2,000 tons; one train (double-headed) totalled 2,021 tons between Wycheproof and Teddywaddy (21 miles) with 70 trucks. Going is comparatively easy over this route in Victoria's north-west, so that the feat was more interesting than spectacular. However, it does show what can be done when necessary.

S.A.R. CLAIMS

The load was, of course, not an Australian record, and the "big-train" conscious South Australian Railways were quick to point out that they regularly handled 2,500-ton loads with one engine over several sections of their system.

NEW MAXIMUM LOADS
For N.S.W.R. North Coast.

As from 7th January, maximum loads for freight trains on the New South Wales Railways' North Coast line have been increased to 1,000-1,100 tons (depending on the motive power used) in the Up direction between Kempsey and Maitland. Two "standard goods engines" (55, 53, or superheated 50 class 2-8-0's) are required for the heaviest trains, 57 class 4-8-2's not being permitted to run over this route.

NEW W.A.G.R. LOCO.

West Australian Government Railways have placed in service the first of the new Pm. class Pacifics imported from Great Britain, and numbered 701.

S.A.R. BROAD GAUGE

Opening of the gauge widening to Narracoorte, S.A. (see R. in A., 1/50) was scheduled for the first of this month. A special train conveyed notables, including the Governor, Sir Willoughby Norrie; included in the make-up of this train was to have been the diner "Adelaide" little seen until recently.

NEW V.R. DIESELS

New diesel-electric switchers for the Victorian Railways will be designated Class F.

Engine Pictures

(Top) Victorian Railways' K class 2-8-0 freight loco, No. 152, completed at Newport Shops in May, 1940. (V.R. Official Photo, courtesy "Truck & Bus Transportation".)
(Below) South Australian Railways' 600 class Pacific in original condition. (Official Photo, courtesy former Railway Enthusiasts' Magazine.)

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park.

Owing to the absence on holidays of Mr. J. L. Buckland, the usual extensive news cover is not available this month.

Opportunity has been taken to include many news items held over from recent issues owing to lack of space.

(During this and the next month or two, our Question Box editor will be absent from home on business. Questions received will be held over pending his return, and dealt with as soon as possible thereafter.)

THE RAILWAYS OF TASMANIA

A Brief Outline

By "Overlander"

The operational history of railways in the State of Tasmania began on February 10, 1871, when a broad gauge line 45 miles long was opened for public traffic by the Launceston and Western Railway Company between Launceston and Deloraine. The Company, however, soon ran into financial difficulties, and its assets were acquired by the Government on October 31, 1873. The Tasmanian Government Railways thus began operations with a 5 ft. 3 in. gauge track, but in August, 1888, this was reduced to 3 ft. 6 in., which is now the standard gauge for the island. The last broad gauge train in Tasmania ran on August 20, 1888, after which four of the five locomotives originally owned by the company were sold on the mainland and the fifth was subsequently converted for service on the narrower gauge, suffering a change in wheel arrangement from 2-4-0 to 4-2-2 in the process! This is the only known case of a single-driver engine operating on this gauye in Australia, and it lasted until 1929, when it was sold for scrap.

The link between Hobart, the capital in the south, and Launceston, principal city in the north, was also constructed for and operated by a private company — the Tasmanian Main Line Railway Company — and was opened for traffic on March 15, 1876, between Hobart and Evandale (new Western Junction), where passengers and freight were obliged to transfer to and from the broad gauge, as the Main Line (as it is still known) was built to 3 ft. 6 in. gauge. This cumbersome arrangement was soon overcome by the Government authorising laying of a third rail over the 11 miles to Launceston and granting "running powers' to the Main Line Company's trains, which, from November 1, 1876, ran to their own terminal at Launceston. This arrangement continued until the broad gauge was abolished in 1888, and two years later (in October, 1890) the Government acquired the Tasmanian Main Line Railway, and thereafter for a short period became the sole owner of railways in Tasmania.

From time to time extensions of the Western line beyond Deloraine were undertaken; the initial extension to Devonport being partially over the route of the private Mersey Tramway; until it now extends a distance of 168 miles to Stanley ,a seaport in the far north-west corner of the island. With the later construction of the North-Eastern line from Launceston to Scottsdale and Herrick (85 miles) and other branch lines in various parts of the State, the total route mileage of Government lines is now 616 miles. In addition, there are approximately 90 miles owned and operated by the Emu Bay Railway Company and 21½ miles by the Mount Lyell Mining and Railway Company, both in the West Coast region. The Main Line from Hobart to Launceston is 134 miles long and the principal branches from it are the Derwent Valley line from Bridgewater Junction (13½ miles from Hobart) to Kallista (58¾ miles), which runs through the picturesque Derwent River Valley past the hop fields of New Norfolk, apple orchards and the largest producing newsprint mills in Australia at Boyer and through Tasmania's National Park, which is 48 miles from Hobart. From Brighton Junction (17¼ miles from Hobart) a branch formerly ran to Apsley (43½ miles), but this line is being dismantled at the present time. From Parattah Junction (55 miles) a short branch runs under five miles to Oatlands. At Conara Junction (34¾ miles south of Launceston) an important 46¾ mile branch runs to St. Marys, a town near the east coast, Mary's, a town near the east coast, through some of the State's finest pastoral and agricultural country. Over this line is hauled the major portion of Tasmania's native coal production, which is used by railways and industry, although hydro-electricity is the principal source of industrial power owing to the island's mountainous terrain.

From the Western line branches extend from Lemana Junction (48 miles from Launceston) to Mole Creek, 15¾ miles; from Railton Junction (67 miles) 14 miles to Roland; from Don Junction (84½ miles) to Melrose, 8 miles, over which limestone destined for the great Newcastle and Port Kembla steelworks was formerly hauled for shipment from Devonport; from Ulverstone (a North Coast port 94 miles from Launceston), 21 miles to Nietta, and from Wiltshire Junction, which is 5½ miles from Stanley, to Trowutta (20 miles), and Smithton (16¼ miles), from where a tramway of 3 ft. 6 in. gauge, bought by the Government in 1929, runs to Redpa, 23½ miles from Smithton. This is the so-called Marrawah Tramway.

The Emu Bay Railway runs from Burnie, an important port 112½ miles north-west of Launceston, southwards through very mountainous country to Zeehan, 88 miles, which is an old mining town, once the hub of a network of 2 ft. gauge railways and tramways, now long closed and dismantled. The Emu Bay Railway Company's line was opened for traffic on December 21, 1900, although portion of the route from the coast to Guildford (37 miles) had earlier been the right-of-way of a 3 ft. gauge wooden-railed line worked by horses. From Guildford, a branch line once ran 10 miles west to the mining town of Waratah, but this was closed for traffic on April 1, 1939, and has been subsequently dismantled.

At Zeehan commences an isolated section of the Government system, all that remains now being the 29½ miles extending south to Strahan and Regatta Point, on famed Macquarie Harbour, and opened on October 16, 1900. Another section of the Government West Coast line ran from Zeehan to Maistris. This line was bought by the E.B.R., but continued to be worked by the Government engines until its closure and dismantling subsequent to 1929. Another Government line in this vicinity was the North-East Dundas line of 2 ft. gauge, famed for its scenery and its multitude of hairpin curves, as much as for its being the first railway in the world to operate Garratt type locomotives. The two small 0-4-4-0 compound machines built by Beyer Peacock and Co., Manchester, in 1909, were truly the progenitors of a now mighty race! It is fitting, therefore, that the builders should, last year, have repurchased from the Tasmanian Government one of these historic locomotives, which has been preserved at their Gorton works. Still another almost unique locomotive to work on this 18-mile line, which terminated at Williamsford — a now-deserted mining town — was the comparatively huge Hagan Patent 2-6 plus 4-0 semi-articulated engine, the wreckage of which still lies at Zeehan. The whole of the Zeehan 2 ft. gauge section was closed in 1929, and has been dismantled since 1939, thus ending one of the most picturesque chapters in the railway history of Australia.

(To be continued)

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394

"1174"

N.S.W.R. No. 5461, a 53-class 2-8-0 freight loco., formerly No. 1174, class TF, was a notoriously bad steamer. The author of these lines is unknown to us.

You talk about the hard times
  You experienced at the war;
Did you ever work to Eskbank
  On "eleven-seventy-four"?

Did you strike a snag at Lapstone
  When you first began to climb?
Did you struggle into Glenbrook
  Half an hour behind your time?

Have you cursed and sworn and sweated
  As you tried to get her through?
Have you ever felt like quitting
  When you got to Warrimoo?

Still you battled gamely onwards—
  'Twas one of many fights—
Because you hoped to get a good one
  When you got to Valley Heights.

But the chargeman meets you smiling
  "Your luck is out this time;
The only engine we have here
  Just failed on ninety-nine."

So you faced the old Blue Mountains
  To do the best you could,
But who could make this engine steam
  When she isn't in the mood?

You shut off over Springwood
  And Faulconbridge as well.
When your mate asks how you're doing,
  You answer: "Crook as hell!"

Then you got at last to Linden
  And you stopped to have a blow,
Your steam was down a hundred
  And the water getting low—

Then the guard books fifteen minutes
  To "loco raising steam"
(He said he'd come and shovel down,
  But he's nowhere to be seen,—

You lost no time to Lawson
  For the pilot did his bit,
But the guard books fifty minutes
  "Overtime on Lawson pit".

Then the driver started firing
  Minus his overalls;
He was looking for the water
  When he got to Wentworth Falls.

And as you watched him firing
  You said: "There's nothing surer—
From the way that he is gasping,
  We'll have to stop at Leura."

But you panted to Katoomba;
  You were sure about the rest
For, although you'd lost about two hours,
  You knew you'd done your best.

And when you got to Eskbank
  And quenched your thirst with two,
And both were doing justice
  To a plate of barracks stew,

You forgot about the hard times
  You experienced at the war,
But you KNEW you came from Enfield
  On "eleven seventy-four"!

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ELECTRIC TRACTION

TRAMWAY — TROLLEY BUS — ELECTRIC RAIL

Formerly published separately as "Tram Tracks"

Standard N class car of the Department of Road Transport & Tramways, Sydney, New South Wales. These maximum traction cars seated 70, and were first in service in 1902. Many still remain, but they are used as little as possible. The car shown is leaving Dowling Street Depot for Zetland to take up an industrial peak-hour run. (J. B. Stranger photo.)

(One of the many fine views in the Australian Tramway Album—see inside front cover.)

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

MELBOURNE—Victoria:

Because of the prevailing labour shortage, the date of completion of the Bourke Street electrification has been delayed further, and the Latrobe Street city diversion may not be finished till July, 1950. The pre-war full colored tickets are now nearly all back in use. SW5 car 840 is now back in service with the longitudinal upholstered seats in the drop-centre.

MELBOURNE—V.R. Tramways:

On 9/1/50, the body of drop-centre bogie car 43 was transferred from the St. Kilda-Brighton service to the Black Rock line, and placed on standard gauge trucks. This is the third sojourn of 43 on the southern route, and its presence will allow the four local bogie cars (48-51) to be overhauled and repainted. The V.R. has decided not to hire rail-scrubbing or grinding equipment from the M.M.T.B. for use on the Black Rock route. Large quantities of rail are on order for renewals, presumably for the St. Kilda-Brighton line.

BENDIGO—Victoria:

The last of the Geelong "Birney" cars has been transferred to Bendigo, making six in use on that system. The latest addition was Geelong No. 15, now Bendigo 32. Bogie cars are still not permitted to operate on the Golden Square route, because of track dimensions. It is understood that this will be remedied soon.

SYDNEY—N.S.W.:

It had been finally decided to close the second part of the Watson's Bay route (Double Bay to Rose Bay) on 31/1/50. However, on 10/1/50 large numbers of enraged citizens of the area attended a protest meeting organised by the local municipality. The Commissioner (Mr. R. Winsor) was severely criticised and heckled when he attended, and finally he was forced to suspend plans for the bustitution. Another protest meeting is being convened to force Mr. Winsor to reinstate the trams right through. They were stopped on 5/12/49. No information is to hand on the planned dates for further NEWCASTLE bustitutions.

HOBART—Tasmania:

The H.M.T. has placed their sixth post-war tram in commission — No. 136 — the car entering service during November, 1949. Ten more standard

THE AUSTRALIAN

ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President : C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone : LF 1665)

If outside Victoria, communicate with the nearest representative:

ADELAIDE : Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND : Mr. D. Fallwell, 3 Matai Rd., Devonport, N.Z.
CHRISTCHURCH : Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON : Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE : Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH : Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY : Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON : Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.

bogie end-loading saloon cars are on order, and eight of these are under construction. Eighteen of the older type of bogie car (first built 1928) have been overhauled and converted since 1947 to the standard saloon type. Only No. 100 (formerly 50) now has the centre as well as the end entrances. The decapitation of the old double-deckers has been complete for some time. They are now purely S.T. saloons, seating 26 each. Five have a front entrance for one-man operation, the rest are two-man cars. No. 54, one of the three S.T. single-deck Combination cars has emerged with two entrances each side, placed one each end of the centre saloon. All tram and trolleybus stops have been numbered consecutively from the City end.

LAUNCESTON—Tasmania:

The L.M.T. hope to reduce the through terminus-to-terminus fare on Sundays and holidays to a maximum of 6d. The highest such through rate at present is 9d. (by tram from Mowbray Heights to Carr Villa). The overhead wiring on the abandoned King's Wharf and Trevallyn routes has been removed, and rails on the former route have been covered up in St. John's Street, City. One tram makes a return journey each day on two "closed" routes—Basin Road and Talbot Road—to assist the buses. All tram and bus stops have been numbered consecutively from the City end. It is expected that the remaining tram services will operate for many months, as the trolleybuses and their

PERTH—W.A.:

We announce, rather belatedly, that two sections of tramway have been closed by the W.A.G.T. since the war. One section ran from the old Victoria Park terminus, as a mile of single track to munition plants at Welshpool. This has outlived its usefulness. The other section—2 m. 50 chns. of single line—running from Mt. Hawthorn to Osborne Park, is now bus operated. This route was built for, and owned by, the Town Properties Co. of W.A. Ltd. in the first decade of the century. It was operated by the Perth Electric Tramways by agreement. The Government acquired the service in 1913. Slow development of the area has always affected the revenue. Rails have been removed in many places. The old tracks ran beside the road.

It is hoped to give the dates of these closures in the next issue.

KALGOORLIE—W.A.:

The sole remaining routes now operate from the City centre to Boulder and Boulder Block, a total length of about 4½ miles. Rails from the closed Collins Street route have now been removed, and the overhead has been taken down on the old Lamington Heights line. The trailers are still in use on special cars to and from the "Golden Mile" mines. Bogie saloon car 21, damaged in a collision in 1948, has been scrapped.

FREMANTLE—W.A.:

From 1938 till the present time, ten S.T. Combination cars have been scrapped. They are numbers 3, 5, 7, 9, 10, 13, 15, 16, 18 and 20. The first six were original cars of 1905 vintage, the rest being in service by 1909. All were built by Brill in U.S.A., carried 40 passengers, and had 2X 35 h.p. motors. Nos. 15 and 16 were owned by the North Fremantle Council, and were used specially for the "North" route, although they were operated and stored by the F.M.T. & E.L.B. The North route was bustituted in 11/1938 ,and the cars soon scrapped.

OVERSEAS ITEMS:

Tramway operations in Southampton ceased on 31/12/49, in Leicester on 9/11/49, and in Rotherham on 13/11/49. The Giant's Causeway Tramway in Ireland (opened 3/9/1883!) is suffering from a financial crisis, and this old line may be abandoned. Glasgow may place contracts for half of the authorised new trams (100 in all) with outside firms, because of congestion at the G.C.T. workshops. The tramway service in Bundapest (Hungary), nearly destroyed during the war, is now practically all in service, and new vehicles are being built to replace war losses.

HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

GIPPSLAND ELECTRIFICATION

Victorian Railways.

Sites are now being selected for sub-stations and tie stations for the electrification of the Gippsland line between Dandenong and Traralgon. In each case these installations will be located near a roadway, for the electrical equipment, including 20-ton transformers, will be delivered by road.

Under present plans, sub-stations will be installed at Dandenong East, Officer, East Pakenham, Tynong, and Bunyip, with intermediate tie stations at Hallam, Beaconsfield, West Pakenham, Nar-nar-goon, and Garfield The designs are such that the tie stations can ultimately be converted to sub-stations with a minimum of alteration, while most sub-stations will be capable of housing duplicate equipment to keep abreast of the anticipated rising load.

New Suburban Trailer.

An experimental type of suburban car is to be constructed by the Victorian Railways. The car will utilize the existing design of trucks and under frame for the latest type "T" class trailer car, but will be fitted with a composite body of new design.

To each side will be fitted three sets of sliding double doors, in lieu of the present arrangement of having a separate door to each compartment. An offset centre gangway will be used to give access to the familiar "Tait" 3-and-2 seating, whilst in the immediate proximity of the doors, large gangways will be provided to allow speedy loading and unloading.

A solid bulkhead will be installed at one-third of the length of the car to divide the smoking and non-smoking compartments. Against this bulkhead, transverse seats will extend the full width of the car.

At present the sliding doors will be hand operated, but provision is to be made in the final design for power operation.

It is proposed to study the reaction of passengers to this car, and to compare the loading time with that of a conventional type car.

Using experience gained with the car in operation, plans will be developed for all-steel cars to be the future standard for suburban services.

Electrical Equipment.

Tenders have been called for the supply of traction motors and control gear sufficient to equip 25 trains (number of cars per train unspecified), with the option of purchase of further equipment for another 25 trains if required.

The traction motors are to be of 190 h.p., in lieu of 140 h.p., as at present, to permit an increase to be made in the rate of acceleration. The control gear will be a low-voltage electro-pneumatic system, and will not mate with the existing 750-volt type M equipment.

This equipment is for installation in the proposed steel cars mentioned earlier, and it now seems likely that once the design is finished, these cars will be ordered in large numbers from overseas.

THE TROLLEY-BUS STOP

HOBART—Tasmania:

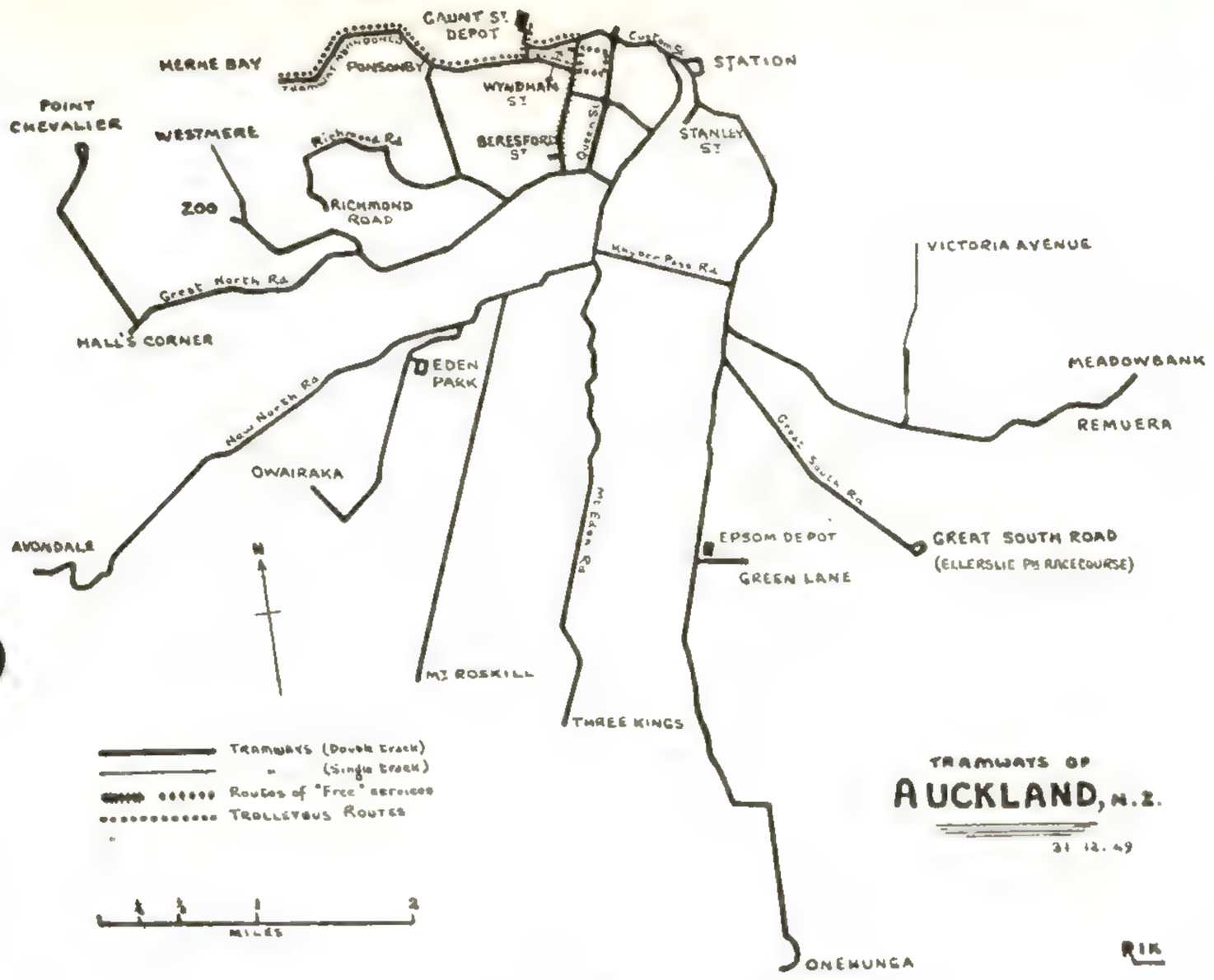
The H.M.T. plan soon to renumber the trolleybuses from 200 onwards. The fleet numbering is at present sandwiched in between the omnibuses and the trams. At present 65-69 are 3-axle front and rear entrance vehicles; 70-84 are 2-axle front and rear entrances, and 85-91 are 2 axle front and centre entrance. The first 1935 vehicle — No. 65 — was formerly numbered 92, and earlier it was No. 25. Thirty-six more trolleybuses are on order, and this will give a final fleet of 63.

LAUNCESTON—Tasmania:

The first trolleybus is expected to arrive in March, 1950. So far, only the floor and sides of the garage have been erected adjacent to the tram depot, and no overhead has been erected on the initial service route to Carr Villa. Concreting of future stopping places and bad sections of roadway have been delayed by material and labour shortages.

TRAM TRACKS

Back numbers of "Tram Tracks" continue to dwindle, and readers requiring copies should order at once. Issues from November, 1947, to August, 1949, are available, with the exception of May and July, 1948. Price of all copies, 6d. each, post free.



Aukland Tramways

A BRIEF SURVEY

By G. C. Stewart

Class M:

The largest class numerically, it represents the oldest standard type of car on the system. Known to local tramway men as the 100 class, the cars in it are 44 feet long with 13 windows, and seat 52.

Class N:

The "middle-aged" standard car, known as the semi-steel class. These cars have 13 windows, and are 44 feet 4 inches long. They seat 52. They were fitted originally with the Auckland City Council Tramways-Auckland Transport Branch bogie modelled upon a New Zealand Railways Department coach bogie, but it was found to be too "springy" for the new class, and was later exchanged for the improved equal wheel Brush bogie of the 100 class.

Classes 1926 and 1929/30 were treated in the same way.

(Classes 1926 and 1929/30 were treated in the same way.)

Class 1926:

Only car No. 206 belongs to this class, which was an experimental one designed and buiit by the A.C.C.T. The several features distinguishing it from the previous class include wooden sides. Length, windows, and seating, are the same

Classes 1929/30:

Although possessing slightly different features, these classes are regarded as one. Windows and seating are the same as in Class N, but the newer cars are 8 feet wide and 44 feet 5 inches long.

Class 1934:

Only No. 86 is in this class, which is similar to but has a different history from Class 1935. Car 86 was an M, which was gutted by fire at the Gaunt Street depot and rebuilt as the first streamliner. When it first appeared, it was lined-out after the Sunderland fashion.

Forty-three feet five inches long, it has 13 windows and seating for 52.

Class 1935:

These three cars are rebuilds from N. Class cars, the sides of which had deteriorated because of the salty air. Length 44 feet 5 inches, windows 13, seating 52.

Class 1937:

These were built as new cars, but were modelled on the 1935 design. Some have EMB trucks, and one, No. 253, the pride of the fleet, is fitted with regenerative controls.

Service Stock:

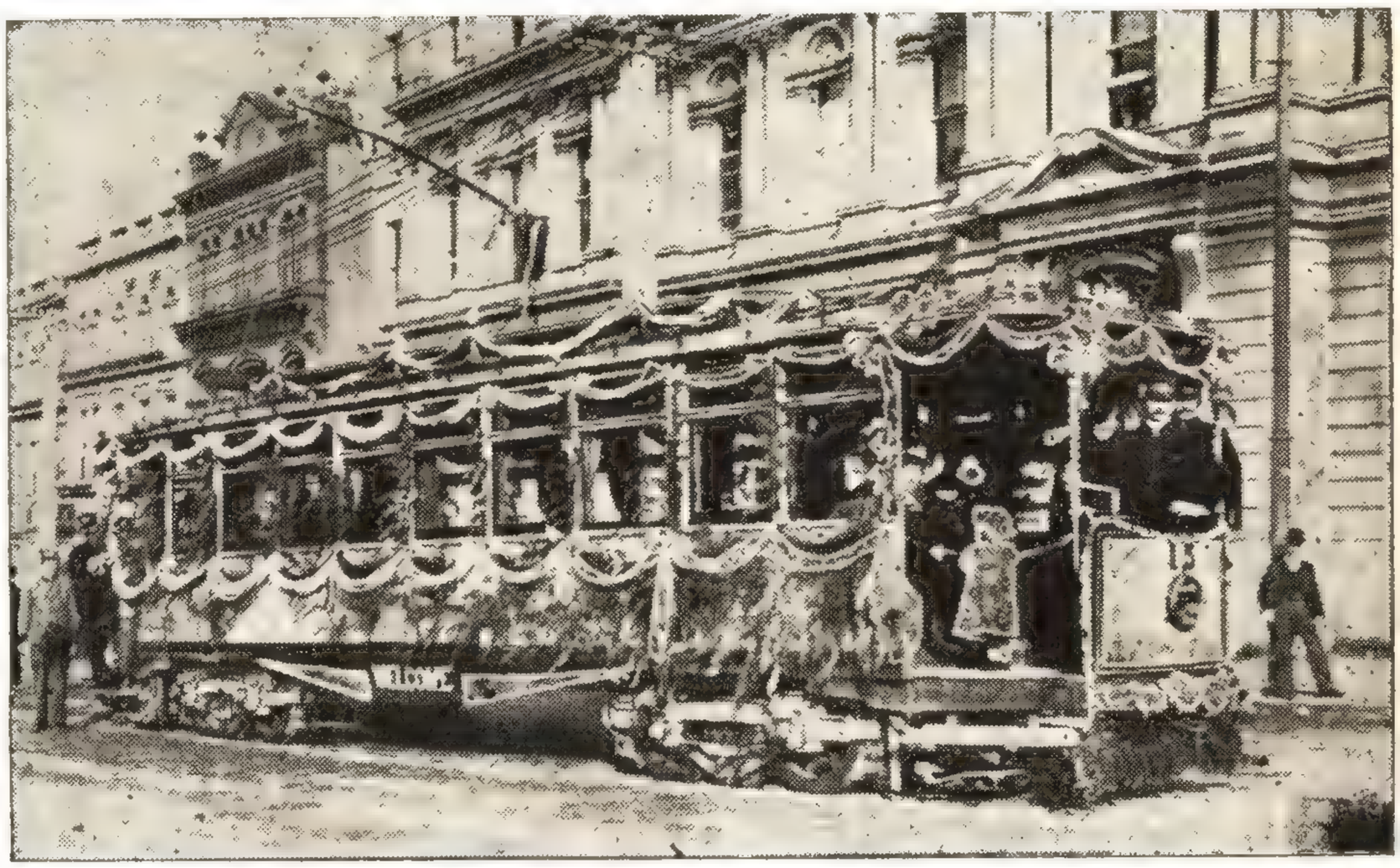
Although cars Nos. 300 and 304 were both designated as freight vehicles, they were widely different in design and purpose. Car No. 300, which was retired just after it had been rejuvenated, ran until quite recently between Epsom depot and the tramway offices in Customs Street West, Queen Street, carrying the takings.

A siding, which was laid for her in Customs Street West, was later removed. The car, which was van-like in design, was a four-wheel vehicle and painted red. While it was being overhauled, a lorry took over the work, and the tram was later dispensed with. Officially scrapped, the car is in fact intact at the Manukau Road workshops, not far from Epsom.

Car No. 304, which is still busy, is fitted with a crane, and has a long platform, on which to convey rails. It is, of course, a bogie vehicle, and looks longer than its 43 feet 6 inches.

The water sprinklers were scrapped before World War I, and parts were incorporated later in the M class cars, which replaced Classes G and K.

The accompanying route map was prepared from information supplied by Messrs. G. C. Stewart and D. Fallwell.



C class car, No. 15, of the Auckland tramways, had been in service scarcely two years when it was decorated in this manner to welcome the Governor-General, Lord Plunket, in 1904. All fifteen cars in this class are still used in peak hour service, having been vestibuled, fitted with two trolley-poles, and otherwise modernised. (Photo from G. C. Stewart collection; block, courtesy Automobile Association, Auckland, Inc.).

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A.E.T.A. NOTES

MELBOURNE BRANCH
Future Meetings.

At the February meeting, which will have been held ere these lines appear, the speaker was to have been Mr. C. L. Busch. Our President planned to speak on experiences during his recent trip to Western Australia, when he was accompanied by Mr. Kings.

The speaker at the March meeting will be the Joint Secretary, Mr. K. S. Kings, who will describe the Perth tramways.

No April Meeting.

There will be no April meeting owing to the meeting date falling on Good Friday. A suitable alternative is being arranged, and members are asked to keep in touch with the Secretary.

The May meeting will be devoted to a talk by Mr. L. Marshall-Wood, A.E.T.A. Councillor and former President, who will speak on his visit to Launceston and Hobart

These meetings will be particularly interesting, and all members should make an effort to get along.

Ballarat Representative.

Now that Ballarat numbers several tramway enthusiasts among its citizens, it is most desirable that the A.E.T.A. should have an official representative there. Our esteemed friend, Mr. Wal Jack, has been appointed to this position by the Council. Mr. Jack's painstaking research, accurate information, and general enthusiasm, are traditional; and it is most fitting that they should be recognised in this manner.

"RAIL AND TRACTION"

A welcome newcomer to the A.E.T.A. magazine library is the Belgian periodical "Rail et Traction." Excellently printed on good paper, and well illustrated, this magazine has resumed publication after a period of silence. Our affiliate body, the Association Belge de Amis des Chemins de Fer deserve heartiest congratulations. The content is varied and includes plenty of traction material for the juice fans. It is all in French, of course, but you'd be surprised how easy it is!

A.E.T.A. LIBRARY

Many members do not seem to be aware of the vast quantities of literature available to them in the A.E.T.A. library. Lack of a permanent headquarters makes things harder for the librarian, but any book or magazine may be borrowed on giving notice. Sydney members should apply through their secretary for books from the H.Q. library. Other interstate members should write for particulars.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

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BOOK REVIEW

"The Complete Book of MOTOR-CARS, RAILWAYS, SHIPS AND AEROPLANES"
(Oldham's Press Limited.)

Although the title of this work might suggest a book for children, it is soon aparent on glancing through this illustration-packed volume that there is plenty of serious fare for the adult. The text is, however, lucidly written, and the many diagrams can be appreciated equally by young and old.

The subjects mentioned in the title receive adequate coverage, but, for some reason not readily apparent, street transport is skimped over. Trams, buses, and trolleybuses are mentioned, but little more. Electric railways are included and the diesel section gives mention of the "Silver City Comet."

Definitely a book that will find a permanent place on our shelf. There are 384 pages with over 300 illustrations, including 70 pages of detailed "how-it-works" drawings.

(Our copy from McGill's Agency, Melbourne, 19/-.)

"THE WORLD'S SMALLEST PUBLIC RAILWAY"
(Ian Allen Limited.)

A really fine, fully-illustrated review of the world's greatest miniature railway. The railway itself is too well-known to require explanation here, but the book is recommended as an accurately detailed record of this imaginative venture — the Romney, Hythe and Dymchurch Railway.

(Our copy from Meadmore Model Engineering Co., Melbourne, 3/9.)

The opinions expressed by contributors to "Railways in Australia" are not necessarily those of the publishers, nor of the Australasian Railway and Locomotive Historical Society. The Society does not accept responsibility for any matter not contained in the "Bulletin" section.

Letters to the Editor

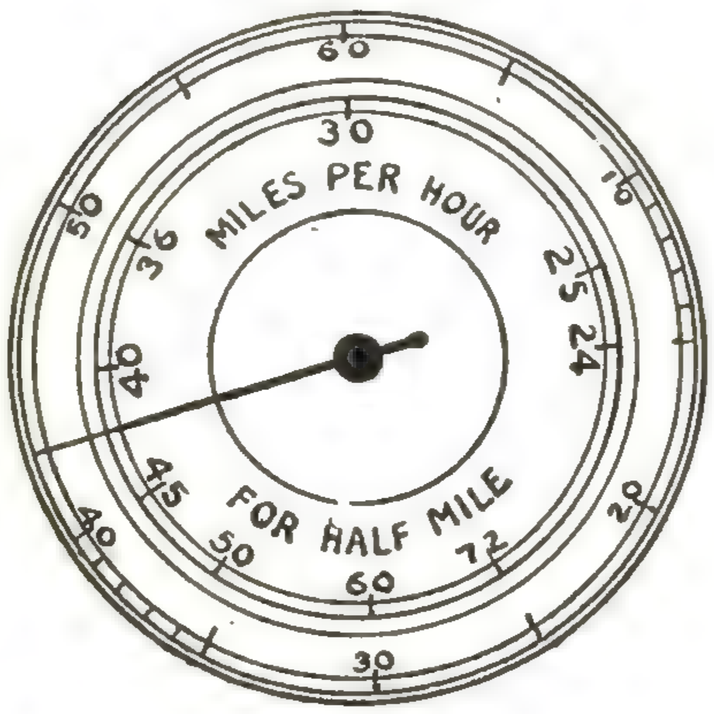
OLD TIME MEMORIES

The Editor,
Railways in Australia.
Dear Sir,

In response to your SOS I am happy to say that I know all about the picture of L22 in your November issue, as I took it! It was taken from the Somerton Signal Box and is the Broadmeadows Local Train starting on its return trip to Essendon. I have not the exact date but it is either late in 1901 or in 1902, probably the latter. In those days the "Car" used to run one trip each day to Somerton, leaving Essendon at 11.5 a.m. and returning at 12.23 p.m., connecting at Somerton with the 9.0 a.m. Goods to Seymour via Coburg. Incidentally, there were also two trains through from Flinders Street to Somerton via Coburg, one each in the morning and evening; I used to return home in the 6.41 p.m.

By the way, the driver of L22 was the veteran Hughie Burlin, and his Fireman, Tom Dunstan.

Yours, etc.,
C. D. GAVAN-DUFFY
Camperdown, Vic.



The Editor,
Railways in Australia.
Dear Sir,

I was very interested in the letters on Train Timing (R. in A., 9/49, 11/49) and have always accepted this as an essential part of the make-up of a railway fan. About 40 years ago I had a cheap stop watch, and while it lasted had much enjoyment. I made a dial on tracing linen, somewhat smaller than the watch dial, and on it calibrated the scale for showing the speed in m.p.h. for time taken for half-mile section, as shown in the accompanying sketch. The scale may be made to show from 18 to 75 m.p.h. without overlapping. Have shown just a few of the markings, but they can all be calculated and plotted on the linen dial, which is then gummed over the watch glass in the correct position. A circular hole, about § in. diameter, is left in the middle of the dial so that the position of the watch hand or needle is easily noted.

Nowadays I use an old-style pocket watch with a second hand, and get the speed approximately.

Recently I did the run from Hobart to Launceston, where they have quarter-mile posts which made timing somewhat easier. I found that the top speed was 45 m.p.h., and, during a chat with the driver at Parattah Junction, found that that speed was the limit.

There are no gradient boards in either Tasmania or Victoria, but, before going on a trip, have a timetable written out showing the mileage and altitude of all stations (culled from an old timetable). Record all departure and arrival times and so get the net running time to calculate average speed. Space on the table between the station names is useful to note the terrain, weather, other trains, and any item of special interest. All this makes a trip very interesting, even if you cannot relax!

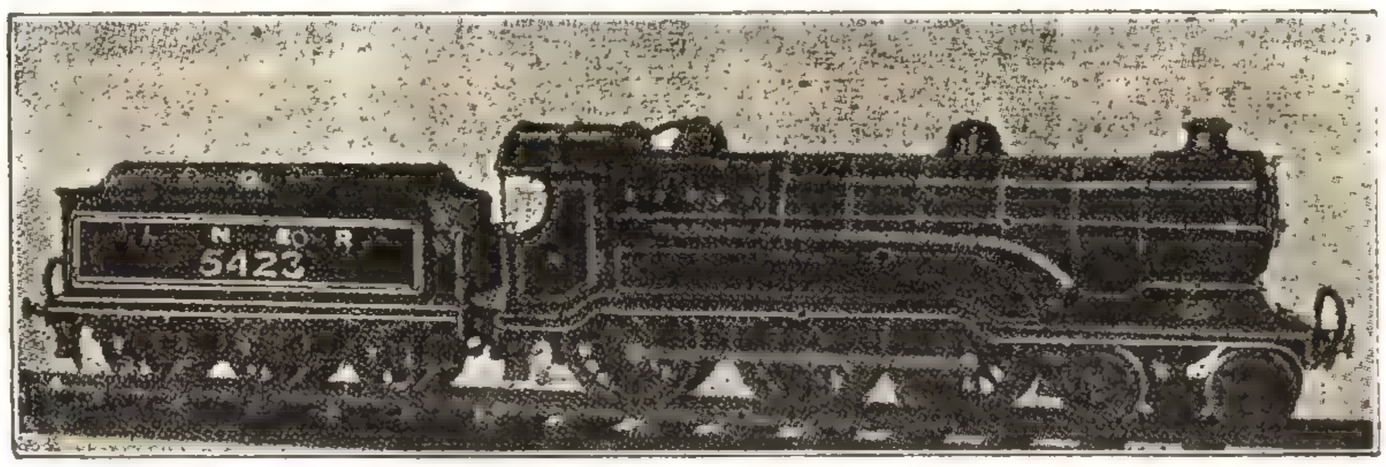
Two stop watches would enable you to record speed at every half-mile or quarter-mile post, by pressing the buttons of the watches together at each post, having one running and the other stopped alternately.

Hoping to see more train timers about, and wishing all the best to R. in A.—Yours, etc.,

WM. BARKLEY,
Tooronga, Vic.

Fan Mail

Dr. G. MAY, South Brisbane, Qld.—Should like to publish pix of that type, but finance is the problem. Magazines you mention have circulations of nearly 40,000



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(and, at that, one is on record as losing money).
I. M. PERMAN, Marlow, England.—Thanks for good wishes. DD17 class has been illustrated twice, also diagram printed. Shall be doing others (T.G.R. new V class appeared recently), as and when possible.
H. W. WHITTLE, Semaphore, S.A.—Have passed on to Bulletin editor your note re Semaphore trains, but I think you may have mis-read the article. Thanks for writing.
W. BARKLEY, Tooronga, Vic.—Using your letter this or next issue. The sketch was perfect; thanks for taking so much trouble.
J. W. SIMPSON, Hornsby, N.S.W.—I'm never quite sure whether you are asking questions or making statements. Diesels get a mention in every issue; don't forget they are still very much in the minority in this country. Am arranging that "Silver City Comet" picture, but can't promise when, as the cost of such things is considerable.

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

ANSWER to J. W. SIMPSON, Hornsby, N.S.W.—Difference in running times between "Spirit of Progress" and the "Overland" over comparable distances is due to the more favourable terrain and heavier rails on the North-East line.

Getting out this magazine is no picnic. If we print jokes, people say we are silly; if we don't, they say we're too serious. If we clip things from other papers, we're too lazy to write them ourselves; if we don't, we're too fond of our own stuff. If we don't print contributions, we don't appreciate true genius; if we do, the mag. is filled with junk. If we change a man's article, we're too critical; if we don't, we're asleep. Now, like as not, someone will say we pinched this. WE DID—and the sentiments are ours, too!

READERS' WANTS

Member of the A.R.L.H.S. and bona fide subscribers to this journal may have small advertisements inserted at the nominal charge of 1/- for five lines. Forward postal notes or stamps (up to 2½d. value) with advertisement to the Managing Editor.

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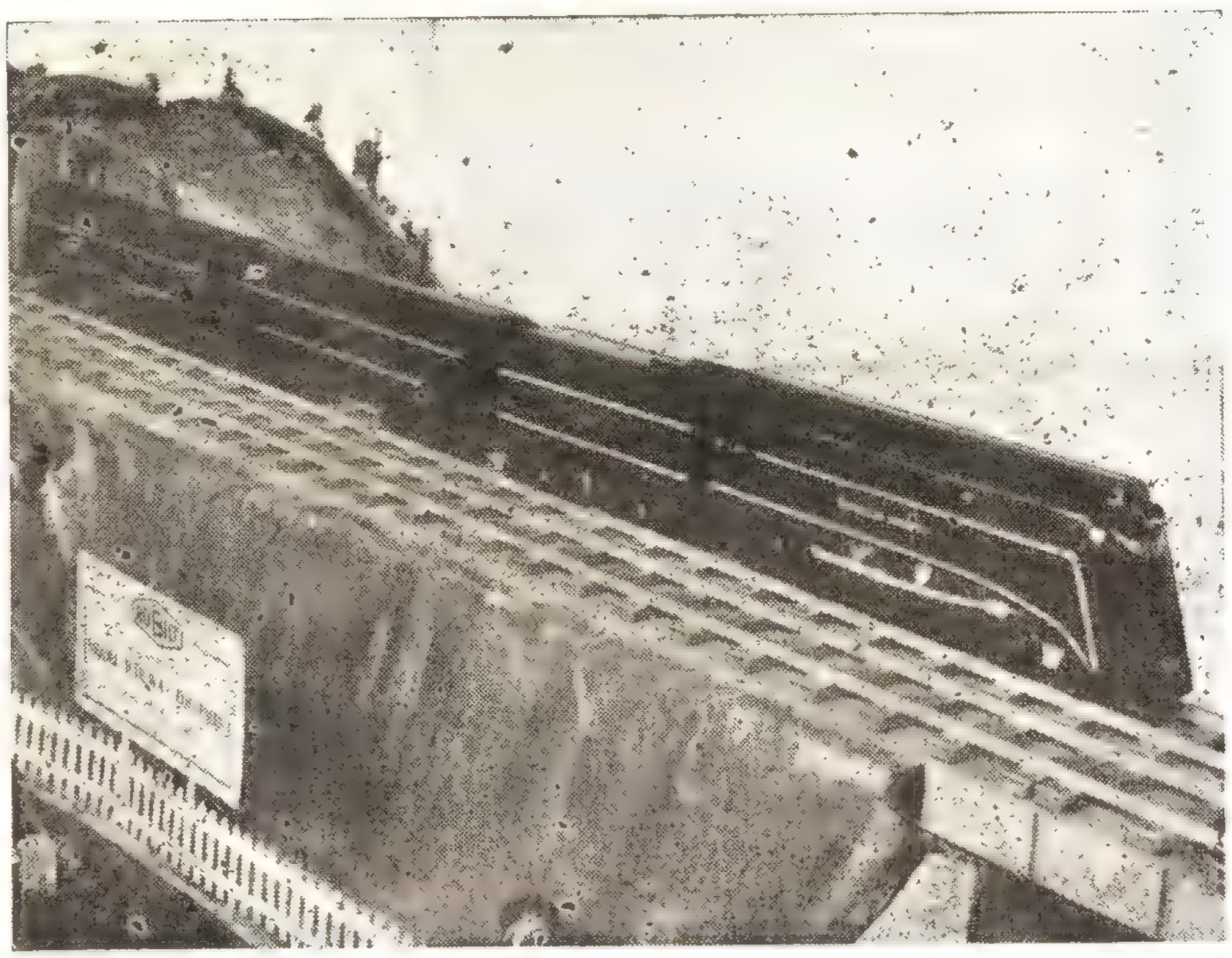

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THE AUSTRALASIAN RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY

SYDNEY BRANCH meets at the Railway Institute, Devonshire Street, at 8 p.m., on the second Tuesday of each month. Secretary: Mr. H. H. Matthews, 27 Ross Street, Parramatta.

MELBOURNE BRANCH meets in Room 8, V.R. Institute, Flinders Street, on the Fourth Thursday of each month, at 8 p.m. Secretary: Mr. R. B. McMillan, Flat 1, 15 Mercer Street, Malvern, S.E.3. Annual Subscription includes the Society's printed bulletin.

Railways in Australia

and

A.R.L.H.S. BULLETIN

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The continued late appearance of "Railways in Australia" is regretted, but is unavoidable at present.

Vol. III, No. 3. March, 1950

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OUR COVER PICTURE

Extra northbound Sydney Express surmounts Wallan bank, headed by A2 4-6-0's Nos. 943 and 956.—J. L. Buckland Photo.

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WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

N.S.W.R. ANNUAL REPORT

Record Passenger Business

The Annual Report for the year ended June 30, 1949, has been submitted by the New South Wales Commissioner for Railways, Mr. F. C. Garside. Principal details are as follows:

The financial results disclose that the earnings totalled £39,663,461, an amount that exceeded the total working expense by £3,924,628. When the Government contribution of £800,000 was added to this profit on operations there was a shortage of £1,915,785, for meeting the statutory charges. Operating ratio increased to 90.11, compared with 84.04 for the previous year.

Throughout the year the Department's transport activities were severely handicapped by inadequate supplies of coal. Drastic reductions were made in both passenger and freight train services, with consequent losses in earnings. Nevertheless, the earnings exceeded the amount for the previous year by £2,757,599, but were offset by increased working expenses.

The Department allowed concessions totalling £271,112, consisting of £6,930 on account of passes issued to blind soldiers and their guides, £144,132 in reduced charges for the transport of livestock and fodder, and £120,050 in rebates of freight allowed to consignees of flour, limestone, canned fruits and jams. Relaxation of road licencing regulations adversely affected railway returns.

Working expenses amounted to £35,738,833, an increase of £4,724,166 on the total for the previous year. Mr. Garside pointed out that this increase was caused by alterations in the basic wage and in award conditions and by higher material costs. A table included in the report shows that increases in working expenses beyond the control of the Department have totalled £16,548,000 since 1937-38. The principal increases were: Basic wage and awards, £9.097,000; materials (including coal), £3,443,000; the 40-hour week, £2,500,000.

Most popular train of the Victorian Railways is not the sleek "Spirit of Progress," but the grubby, fussy, little 2ft. 6in. gauge Gembrook train. As with most narrow gauge railways, motor competition has killed the bread-and-butter earnings of this line in Melbourne's Hills district, but every Saturday and holiday, excursionists happily crowd the diminutive cars, riding on footboards—even on the roof at times. The two mid-week mixed trains mostly haul potatoes. Guy Bakewell took this shot some years ago at the Horseshoe Bend trestle over Monbulk Creek. (Block courtesy former "Railway Enthusiasts" Magazine.)

Despite the restrictions placed on passenger train services as a result of coal shortages, a record number of 263,116,462 passenger journeys was made, an increase of 69,647 on the total for the previous year.

The goods traffic hauled totalled 16,903,172 tons, a decrease of 503,977 tons on the quantity hauled in 1947-48. This decline in goods traffic was due to the restrictions caused by coal shortages. Indeed, the number of freight cars ordered to convey goods traffic of all classes amounted to 1,456,230, but it was only possible to provide 1,020,375 of them.

The locomotive mileage totalled 43,952,127, an increase of 298,626 miles on that of the previous year. The gross ton mileage (passenger and goods) increased from 12,663,105,932 to 12,806,899,026. Suburban electric trains ran 8,456,037 miles, a decrease of 1.48 per cent., which was caused by intermittent service cuts.

During the year a second air-conditioned 7-car steam train and three two-car diesel rail motor trains were placed in service. The air-conditioned train was similar to the Newcastle Express placed in service in the pervious year and it was also run as a Newcastle Express to provide three trips each way between Sydney and Newcastle, Mondays to Fridays, and two trips on Saturdays. The three diesel units began operating on the Dubbo-Coonamble, Dubbo-Gwabegar, and Mudgee - Wallerawang branch lines. Others have been installed subsequently on the Queanbeyan-Bombala, and Cootamundra-Lake Cargelligo lines.

Many improvements were made to bridges, tracks and signalling to meet heavier traffic demands. A start was made on earthworks for the Northern line duplication from Branxton-Muswellbrook and new sidings and refuge loops provided at many locations. A start was made with provision of railway connections to the new State Coal Mine near Awaba and a route has been selected for a railway connection to the site of the new Wangi Power Station on Lake Macquarie. A survey was also undertaken for a 15-mile line from Thirlemere to the site of a proposed new State Coal Mine at Burragorang, and estimates made.

Dislocations to traffic by record floods in the Maitland area in June, 1949, were serious, but traffic was restored and flood damage repaired with commendable rapidity.

Difficulties experienced in obtaining railway equipment and supplies in Australia led to the placing of large orders overseas for locomotives, rolling stock and rails, details of which have been given in previous issues.

Large railway works in hand included the quadruplication of the lines between Lidcombe and Penrith and between Strathfield and Hornsby, the construction of the Circular Quay section of the City Railway, preliminary work on the Eastern, South-Eastern, and Southern Suburbs Railways, and the building of the Sandy Hollow to Mary Vale Railway. Trial surveys are being made for a proposed railway linking Inverell with Iluka, where a new port is to be built.

S.A.R. DIESEL-ELECTRIC LOCOS
English Electric Gets Contract

As announced in our July, 1949, issue, South Australian Railways have ordered diesel engines and electrical equipment from the English Electric Co. for the construction of ten diesel-electric road locomotives, each of 1,760 h.p., which will be built at Islington shops.

These locomotives will be used principally on the Adelaide-Tailem Bend main line in both passenger and freight service, and will be operated when necessary in tandem as a multiple unit by one crew. They will have the Co-Co wheel arrangement with two traction motors per bogie. Total tractive effort at the rails will be 42,500 lb. (or 85,000 lb. when two locomotives are operating as a multiple unit), which will enable operation of 600 ton trailing loads over the 1 in 45 ruling grades through the Mount Lofty Ranges at a minimum speed of 20 m.p.h. This tractive effort rating is based on a factor of adhesion of 25 per cent. The locomotives will be streamlined in accordance with prevailing SAR practice, and have a total length of 60 feet. Bogies will be at 36 ft. centres each, with a wheelbase of 16 ft. 2 in. Total roadworthy weight is estimated at 114 tons.

Dieselisation of the Hills line is expected to suffciently speed up traffic to appreciably increase line capacity and hence postpone temporarily further duplication. SAR expects diesel-haulage of "The Overland" to speed up the operating schedule, whilst at the same time permit operation of a heavier consist including a cafeteria car.

During the year approval was given for the major work of main line electrification from Sydney to Lithgow, Newcastle, Port Kembla and Goulburn. Work is already in progress on the first part of this project, involving 350 track miles.

Many additions and improvements were made to the railway plant and equipment. At June 30, 1949, the total capital invested in the Departments assets was £173,100,320.

The value of stores purchased was £14,046,156, the highest in the history of the Department. Of this amount, £3,814,593 was spent on coal, £1,185,543 on iron and steel products, £784,112 on timber, £710,032 on electrical equipment and supplies, and £606,679 on fuel oil.

Over the twelve months the staff employed averaged 59,312.

The Commissioner, in a tribute to the staff, said: "I wish to record my appreciation of the loyalty and efficiency displayed throughout the year by the members of the staff. Under extremely difficult operating conditions, they succeeded in rendering a splendid service to the State."

The year's results, whilst not so satisfactory financially, reflect great credit upon the Department, which has been able to carry on under extremely difficult conditions, with insufficient materials, facilities and equipment to cope with continuously expanding demands upon its resources.

NEWS EDITOR WANTED

Our News Editor, Mr. J. L. Buckland, has been compelled to discontinue his valuable contribution, as he is leaving Australia in the very near future for a visit to Britain and other countries. His departure leaves a very real gap in our midst. Mr. Buckland's services were entirely voluntary and often at some inconvenience to himself.

We should be very pleased to hear from any reader who would assume this onerous but interesting office. No tangible reward is offered but the grateful thanks of the large band of railway enthusiasts in Australia and overseas.

In the meantime, would readers forward cuttings and news items direct to the Managing Editor, please.

Q.R. TO BUY DIESELS, NEW CARS
£3,000,000 Rolling Stock Plan

The Queensland Government plans to buy ten diesel electric locomotives and eight steel air-conditioned express trains for long distance services.

Tenders are being sought for diesel-electric locomotives of a known capacity not less than the Beyer-Garratt steam locomotives at present on order, which have a theoretical starting tractive effort of 32,770 lb. (or approximately 30,840 lb. at the usual Garratt rating of 75 per cent.). Since dollars are unlikely to be available, British or Continental builders may get the contract. Latest British developments in diesel prime movers have enabled production of units small enough and light enough for use within the space and axle-load limitations of light 3 ft. 6 in. gauge railways. According to Q.R. officials, diesel-electrics would have to run at least 75,000 miles a year to justify their higher first cost, reckoned as at least 2½ times that of comparable steam power.

Eight long-distance air-conditioned trains have already been ordered from Commonwealth Engineering Co. Ltd. Queensland plant at Rocklea, and are additional to equipment listed as on order in the 1949 Annual Report. These trains will cost more than £2 million. Five will be for operation over the North Coast Railway between Brisbane and Cairns, and one each between Townsville and Mt. Isa, Rockhampton and Longreach and Brisbane and Cunnamulla.

The new trains will be air-conditioned (from a power car installation) and insulated against noise and heat. Hot and cold water will be available in lavatory compartments and iced drinking water provided. Cars will be of the centre-aisle type, with reclining, rotating seats designed for long distance comfort, with fluorescent lighting and step lights for ground loading will be featured. Delivery is not anticipated before early in 1953.

The diesel locomotives are required for hauling 420 ton trains over the difficult 1043 miles North Coast line to Cairns, refuelling only once en route. The Government may have in mind ordering English Electric Co. diesel locomotives, which that Company plans to build components for at its recently-acquired Rocklea plant. The Chief Mechanical Engineer of the Q.R. (Mr. V. Hall) investigated diesel-electric traction during his recent trip abroad.

CALLIDE COAL TRAFFIC PLANS

Improvements to the Dawson Valley line of the Queensland Railways to expand its capacity to transport coal from the Callide field to Gladstone, the nearest deep water port, are estimated to cost almost £3 million.

A line 11 miles long to link the field with the existing railway at Biloela, together with marshalling and locomotive terminal facilities, will cost at least £385,000, whilst the regrading and deviation to eliminate the Mount Morgan rack section, extra sidings and crossing facilities, additional locomotives and rolling stock necessary, and port improvements at Gladstone will account for the balance.

The Mount Morgan deviation contract (for earthworks and drainage) has been let to Central Construction Co. at a cost of £170,550, and will be completed in under 12 months. The Q.R. will provide sleepers, rails and ballast and construct this deviation, at a total cost of £400,000. This work will take a further six months to complete. Even with present traffic a direct saving of £9,800 per annum in operating costs will result. The greater traffic capacity will considerably expand the revenue earned.

WATTLE PARK

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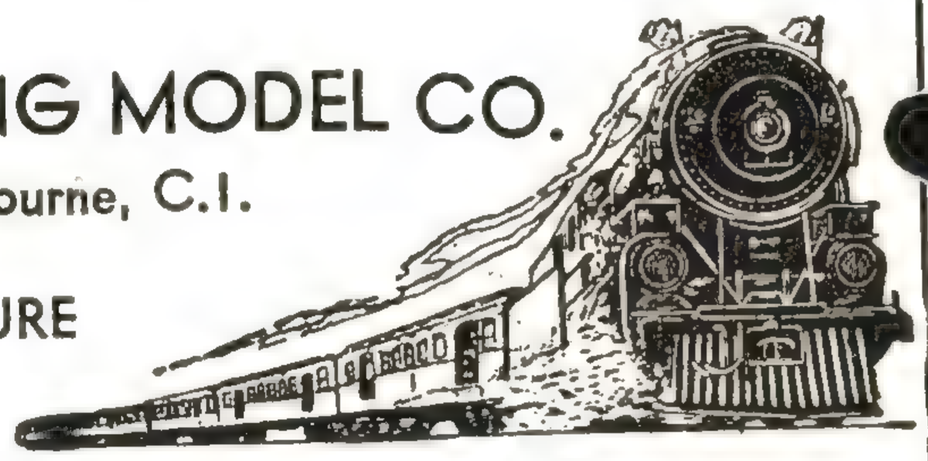

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GAUGE PLAN DELAY

Australian railways' No. 1 headache —standardisation of gauges—has received a further set-back (perhaps only temporary) by Federal Cabinet's decision not to expedite the agreement already made with S.A. Government because of material shortage. However, Cabinet reaffirmed the decision to standardise from Broken Hill to Port Pirie, and from Kalgoorlie to Fremantle. A Cabinet sub-committee is at present reviewing the whole of the standardisation proposals. It is unlikely that any large-scale work will be undertaken in either Victoria or South Australia for at least five years.

The Government has decided that a direct Callide-Gladstone railway is impracticable with the present material shortage. The Gladstone port authorities have invested £100,000 in improved coal shipping facilities, including electric cranes on the wharf. Coal for export to other States, at present hauled by road direct to Gladstone, will be railed 180 miles via Rockhampton, which has no suitable deep water port, except nearby Port Alma, which has no coal handling facilities.

TRAINS "GO BY ROAD"

Towards the end of 1949 famed Northern Territory identity and road transport operator, Kurt Johansen, of Alice Springs, commenced transferring 4 locomotives and tenders and 71 freight cars and brake vans, surplus on the North Australia Railway, 660 miles overland by road from Larrimah to Alice Springs.

It will be recalled that during the war some locomotives and rolling stock units were similarly transported to the under-equipped North Australia line from both Alice Springs and Mt. Isa, Q.

Mr. H. E. Watson, Secretary Commonwealth Railways, has supplied the following particulars of the transferred equipment, not all of which is yet completed.

Locomotives: NFB 47 (ex SAR Yx 126); NFB 49 (ex SAR Yx 132); NFB 51 (ex SAR Yx 160) and NFB 89 (ex SAR Yx 154), all transferred in 1949.

Rolling Stock: 4 NGB bogie open freight cars (ex WAGR R-class), 7 NFA bogie refrigerator cars, 5 NRC bogie 35 ft. flat cars, 5 NHA bogie brake vans (ex WAGR Z-class), 30 NGC bogie 40 ft. open freight cars, and 20 NRA bogie 40 ft. flat cars.

The railway equipment is loaded at Larrimah on to large diesel hauled road trailers weighing nearly 100 tons loaded. A locomotive and tender, a flat car and brake van comprised a load. The locomotives will be used for shunting and stand-by service on the Central Australia Railway, which is experiencing record traffic with the further development of the Leigh Creek coalfield at Telford . . . miles north of Quorn.

VICTORIAN RAILWAYS

With the conversion of the last A1 (saturated) class engine, No. 808 (ex 798 A2), to superheater as A2 816 in October, 1949, the A1 class is now extinct. Flinders Street station buildings are being repainted cream with green window frames and brick-red "false masonry" for the first time since 1936. Spencer St., Ballarat and Geelong stations will follow. Melbourne's Lord Mayor (Cr. James Disney) was severely taken to task by Melbourne Press for his statement to ARTF delegates that "railways were outdated and gauge unification too late." Cr. Disney has business interests in the automotive industry!

Further consideration may be given by the VR to the proposal to amend internal layout of future steel passenger cars by substitution of centre-aisle saloon type accommodation for obselete compartment seating. This proposal may lead to a revival of a post-war plan to build steel centre-

W.A.G.R. HEADS NEW LOCO. PROCESSION

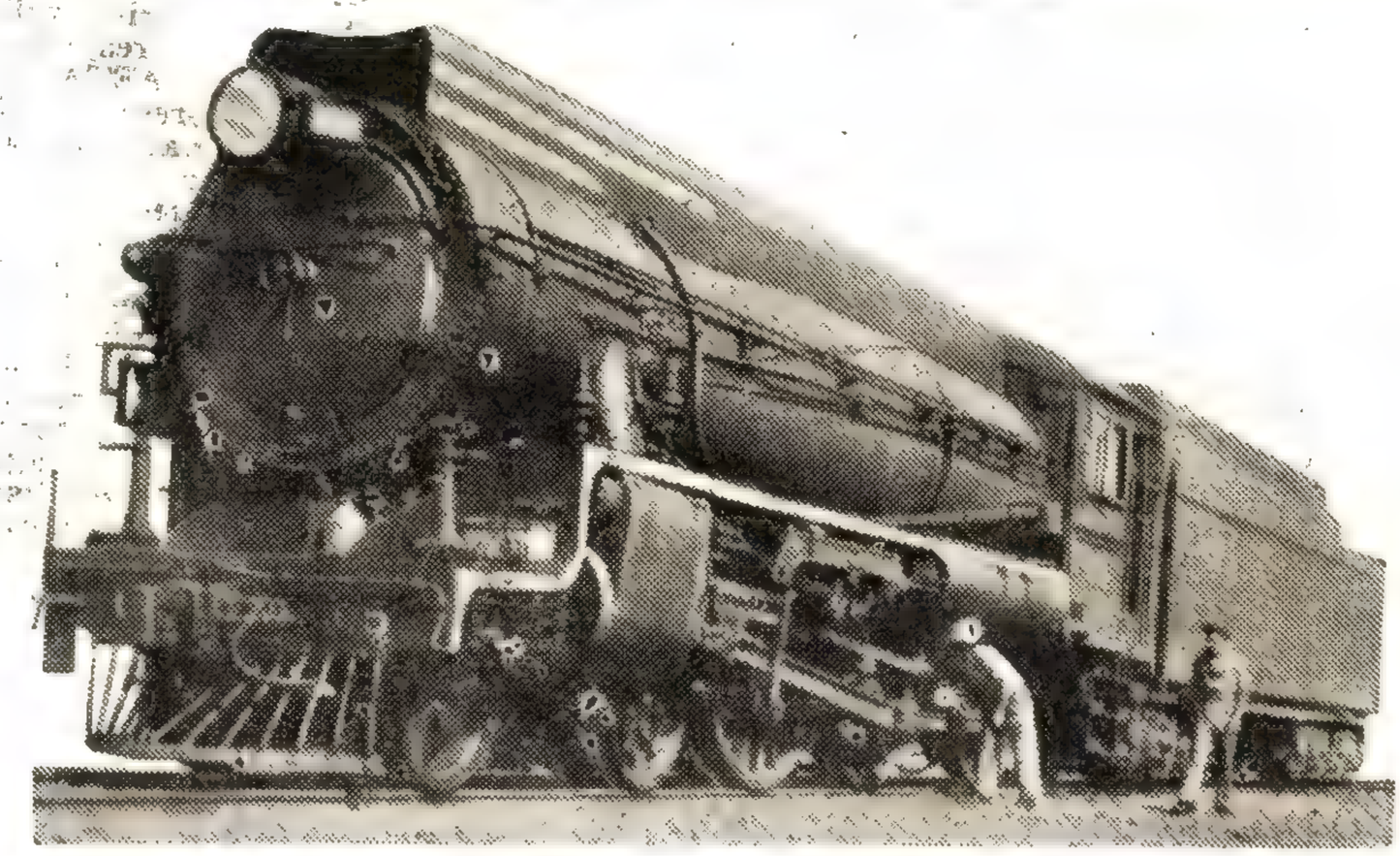
First in Service

Western Australia was first to order new British locomotives after the war for replacement of obsolete motive power and for its rehabilitation and expansion programme. Other lines throughout the country have since followed, until more than 300 steam, diesel, diesel-electric, and electric locomotives are on order for Australia.

Late in 1949 the first batch of the W.A.G.R. order for 35 Pacific locomotives (designated class PM) was landed from North British Locomotive Co., and No. 701 went into service early in December. Dimension of these locomotives are almost iden ic l with the existing PR-class, and were detailed in the July, 1949, issue. There are slight variation- i equipment details, however, which are li ted.--

Weight roadworthy, engine 64 tons; tender 38.5 tons; total engine and tender 102.5 tons. Engine wheelbase is 28 ft. 6 in., of which 10 ft. is rigid and total engine and tender wheelbase is 53 ft. 10½ in. Maximum axle load is 14 tons. With 19 in. x 26 in cylinders, 54 in. dia. drivers and 175 lb. boiler pressure, the tractive effort is 25,850 lb. at 85 per cent. rating. Builders serial numbers allocated to these 35 locomotives are 26545-26569 and 26921-26930.

Roller bearings are fitted to all axles, except in the case of the first 19 engines, which have plain bearings for the coupled axles. A new design of rectangular shaped boiler-mounted sandbox is fitted and top feed clack valves are located at the smokebox tubeplate end of the barrel. Design changes include alteration of the trailing truck from the Cartazzi type to a spring-controlled radial axlebox type. The cylinders are lubricated by a four-feed hydrostatic lubricator whilst a Silvertown mechanical lubricator is provided for the coupled axleboxes and horn cheeks. Cylinder relief valves of the Cardew type are fitted, also manually operated blowdown with a centrifugal muffler located under the footplate. The tender follows the design of the S-class—a low rectangular tank with a central turret type bunker which makes for maximum visibility when operating tender first. The new PM engines are painted black with red headstocks and have standard WAGR solid steel pilots.



Known as "The Commissioner's Engine," No. 65 of the Commonwealth Railways (4ft. 8½in. gauge) is distinguished from other C class 4-6-0's by the shrouding atop the boiler. David Burke was the photographer.

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aisle 60-ft. cars for secondary main line services. Passenger cars may be sought from Australian or British manufacturers.

Three power bogies for 280 b.h.p. twin diesel railcar units have arrived at Newport. The first unit is scheduled to go into traffic on the Daylesford through service early in May. The first-class car of these railcar sets will feature reclining seats and fluorescent lighting.

New livestock loading ramps and sidings are being built at Coleraine Junction (between Portland and Coleraine lines) as part of a new Hamilton Municipal Saleyards project.

VR is studying the effectiveness of the SAR-STC-NSWR container service for LCL direct Adelaide-Sydney freight traffic, via Broken Hill. If considered satisfactory, a similar service may be inaugurated between Melbourne and Sydney.

"MINIATURE LOCOMOTIVE CONSTRUCTION"

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Although the author is obviously interested primarily in HO gauge models of the smaller type of locomotive, his methods are applicable to any class of engine in any gauge. In his description of these methods, Mr. Ahern relates what actually does happen in the often hectic business of miniature locomotive construction. Similarly, his illustrations show chassis and models in various stages of construction, rather than those finished perfecta which are the despair of so many aspiring modellers. Every aspect of the problem is covered, beginning with the tools employed, and including descriptions of all types of motor and methods of drive.

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Please note that we do not accept annual subscriptions through agencies. A few have been taken in the past, under special circumstances, and these will be continued. However, every such subscription represents a loss to us which we cannot afford.

By all means buy the magazine from our many retailers (see list, inside back cover) but, if you want your copy posted, send the subscription to TRACTION PUBLICATIONS.

Financial Problems

The financial position of this journal, never very firm, is particularly difficult at present. Whilst our circulation continues to grow quite fast, the magazine continues to be produced at a loss. In these circumstances, every least setback adds new difficulties. Quite frankly, the principal cause of late publication is lack of funds. This, in its turn, slows down our rate of income, producing further delays. Other causes there have been, but lack of money is our biggest worry.

Prompt Renewals Help

The situation would be vastly improved if all subscriptions were renewed promptly on expiry. We have been most lenient in the past, and in nearly every case the subscription involved has been renewed—ultimately. Now, we have to pay our bills promptly and failure to do so would endanger the existence of this journal.

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We have all kinds of plans for improving the magazine. They all require more revenue. It all depends on you!

TASMANIAN RAILWAYS

In view of our late publication, the article on Tasmanian Railways by "Overlander" has been held over to make room for increased news cover.

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ELECTRIC TRACTION

TRAMWAY — TROLLEY BUS — ELECTRIC RAIL

Formerly published separately as "Tram Tracks"

Shown in service on the Port Adelaide system of the Municipal Tramways Trust, Adelaide, this Birney car was one of four sold to the State Electricity Commission of Victoria for their Geelong lines. More recently these cars, with two others already in use at Geelong, were transferred to Bendigo (see article this issue). (From the Australian Tramway Album.)

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

SYDNEY TRAM ROUTE RESTORED
Public Protest Succeeds

Following vigorous public protest meetings, the New South Wales Commissioner for Road Transport (Mr. R. Winsor) has ordered the reinstatement of the abandoned Dover Road-Watson's Bay section of the Watson's Bay (Sydney) route. Track gangs are at work, and service is to recommence on April 19.

Except for wartime emergency purposes, this is the first abandoned tram route to be re-instated in Australia. Similar vigorous opposition halted the move to close the Double Bay-Dover Road section some months ago. Speculation is now rife as to whether the Gladesville-Ryde route will be reinstated. (As on the Watson's Bay route, service has been provided by "express" buses.) It is understood that Mr. Winsor's views have not changed in any way, but that he believes in giving the public what it wants, where possible.

SYDNEY—N.S.W.

The Department of Road Transport & Tramways has called tenders for the dismantling of 16 "K" class tramcars, now derelict at Randwick Shops with glass, bogie and equipment removed. The numbers have not yet been ascertained. The class operated on the Main system and at North Sydney, and very few remain now in service.

Described in the newspapers as a "new look" tram, No. 1958 R1 class has been rehabilitated and equip[illegible] with special bogies obtained from the Brisbane service, which incorporate the rubber cushioning. If tests are sucsessful, further bogies will be ordered.

(Continued from page 4)

Random Reflections

TROLLEY BUSES

Some reflections which I wrote for "Tram Tracks" on the subject of trolley-buses have not met with the approval of Mr. Basil Ratcliffe-Miller, of Portsmouth, who does not help his case by demonstrating his ignorance of facts which are within the knowledge of most students of transport. The hyphenated gentleman declares that Wolverhampton was never "an all-trolley-bus town." Who said it was? I wrote that Wolverhampton was the first all-trolley-bus city," referring, of course, to the fact that Wolverhampton was the first city to convert all its tram routes to trolley-buses. That there were some routes which were then, and which had always been, operated by petrol buses had nothing to do with the case. It is not my fault that he does not know that Wolverhampton decided years ago that all future extensions are to be serviced by Diesel buses; nor am I responsible for his being ignorant of the fact that Mr. Owen Silvers retired many moons ago from the General Managership and has been for months a consultant of a technical magazine and a director of a motor manufacturing company.

As for London's decision to have a complete Diesel system, that was at the time criticised strongly by the leading technical journals. If my memory is correct, I think the editor of "The Transport World" commented acidly that the reasons given for the somersault were equally relevant when London Transport explained the decision to convert to trolley-buses 15 years ago. There was not the slightest suggestion in what I wrote that the altered policy is one for immediate implification. Even Mr. Ratcliffe-Miller ought to know that the complete "busification" of the metropolis is a long way in the future.

BOURKE STREET IN 1955?

Some tram enthusiasts consider that the prediction in "The Age" that buses will not vanish from Bourke Street until 1955 has come and gone is unduly pessimistic. My reflection is that, if anything, it is unduly optimistic. Con anybody say, for instance, that the labour situation will be any better three years hence than it is to-day? Yet if the labour position has not improved by something like 200 per cent. the ideal of a finished job by 1955 will be impossible of realisation. Manpower scarcity prevents a start being made just now; in fact, from what I hear, I doubt if the Per. Way Department has sufficient men to keep the ball of maintenance rolling in pace with the demands. There are other factors also which must be taken into consideration. Where are the necessary trams to come from? From the annual reports I gather that for the last 11 years the average construction has come to slightly less than 10. That number, it would not surprise me to be told, has been below the minimum number necessary to keep the fleet up to the required strength; in fact, I fancy I remember a remark made by the former Chairman (Mr. H. H. Bell) last year to the effect that the rolling stock wos actually below requirements. No doubt some initiative and enterprise and more up-to-date methods of construction—improvements which may be expected when the present Chairman (Mr. R. J. H. Risson) gets down to brass tacks—would improve production substantially; but after making allowance for all that, the fact remains that it is going to be a hard job to get all the rolling stock required, plus the necessary replacements, built by the end of 1955.

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Bendigo Tramways

A BRIEF REVIEW

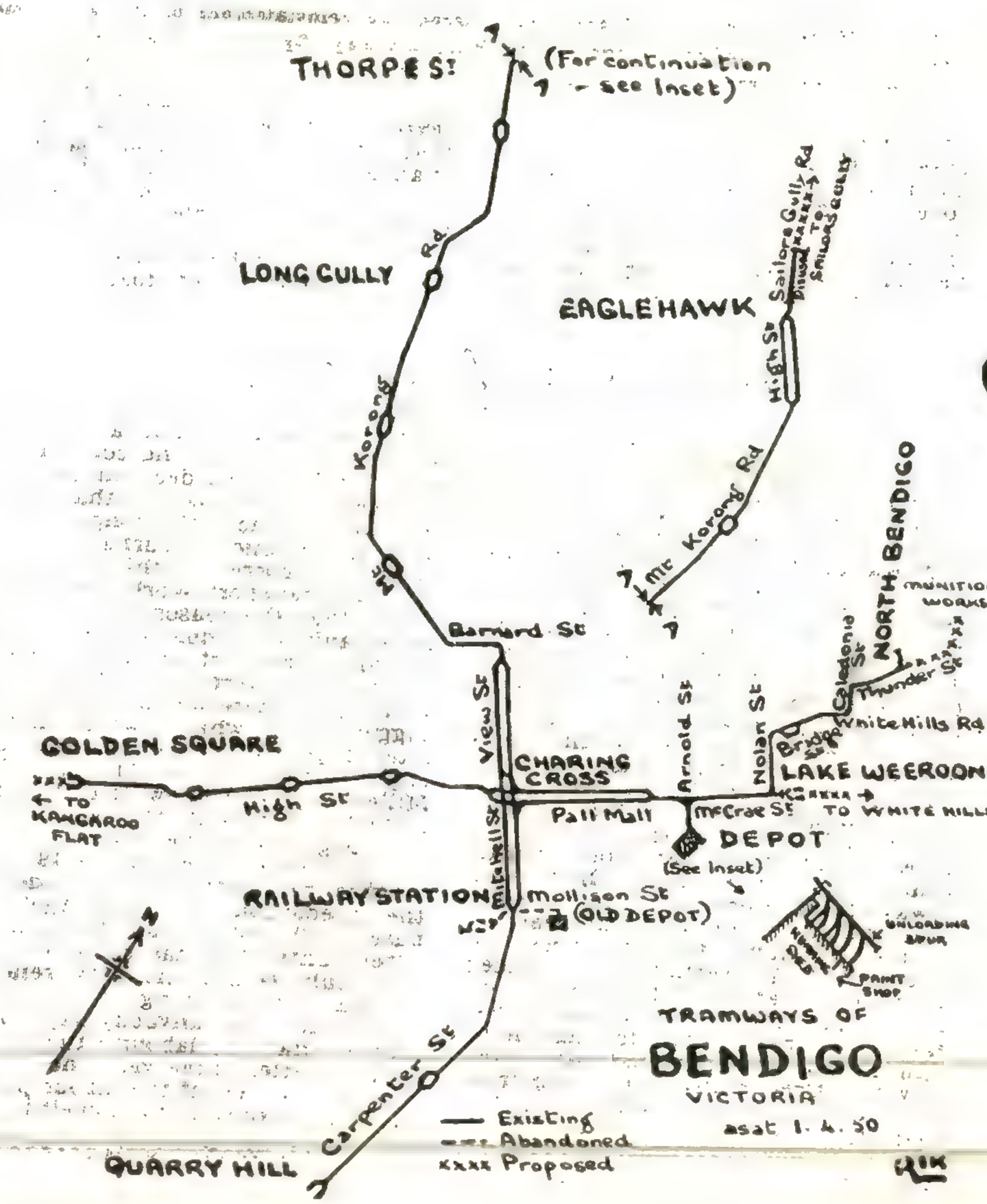
The Tramways of Bendigo have had a long and varied history. As planned in 1888, the system was to have two routes—Sandhurst (now Bendigo) to Eaglehawk, and Kangaroo Flat to White Hills via Sandhurst, operated with electric traction. Battery cars were used, and the first route was opened to Eaglehawk (4 m. 30 ch.) in 1889, with eight 22-passenger saloon cars. The line was owned and operated by the Sandhurst and Eaglehawk Tramway Company, whose offices and 3-track car shed were located in Mollison Street. A locally built car acquired in 1891 proved too small for effective use. Also a failure was the battery system employed and, after unsatisfactory trials with horse traction, permission was obtained to use steam power. Five standard motors were supplied by Baldwin, and three slightly larger units were built at Ballarat by Phoenix. Eight bogie trailers were used, together with the de-motored battery cars. Service commenced in 1892, at which time the company's name was changed to the "Bendigo Tramway Company." At this time, the short extension to the Railway Station was opened.

Electrification

Electric traction proper was inaugurated in 1903 by the Electric Supply Company of Victoria, who acquired the undertaking four years previously. An extension was built to Quarry Hill and the second route was added, but only as far as Golden Square and Lake Weeroona respectively. Sixteen "California" type combination cars, with clerestory roofs, were provided by Duncan & Fraser of Adelaide. In 1912, two open toast-rack cars were added, also a sprinkler car imported from England. The locally built battery car was retained as a trailer, and, for a time, eight double-deck horse cars from Ballarat were used similarly. Ten larger open combination cars were purchased in 1932 from the Melbourne & Metropolitan Tramways Board, a similar number of the original combination cars being scrapped.

The S.E.C.

The State Electricity Commission of Victoria took over the system, along with those in Ballarat and Geelong, in 1934, and completely reconditioned the cars, track, and overhead. Three more combination cars were obtained from Melbourne, also a closed combination car, between 1934 and 1939. Since the war ended, four maximum-traction, bogie, drop-centre cars have



Bendigo car types shown on previous page are (top, l to r): Ex-M. & M.T.B. open combination; conversion to "Ballarat" type saloon; conversion to "Geelong" type 1/2-man design; (lower) Ex-M. & M.T.B. closed combination; original car "modernised". Pictures above show the toastrack car and the sprinkler. Photographs by W. Jack, L. Marshall-Wood, J. B. Stranger, and P. W. Duckett.

been added, also from Melbourne, together with six Birney cars from Geelong. All the original cars, as well as one toastrack, have now been scrapped, and the second toastrack is used as a breakdown car. In 1942, the extension to North Bendigo was added to serve the munition works. To provide the extra service, several of the old cars were partly modernised. Several ex-Melbourne cars were converted for 1/2-man operation. Single track sections are equipped with Forest-City automatic colour-light signalling. Except on the North Bendigo line, all loops are symmetrical, the track being located centrally in the roadway. Track, cars, and equipment are well maintained.

Future Plans

It has been proposed to replace the trams with trolley buses, but local opposition and the continued turmoil of State politics have prevented any positive action being taken. The existing system can provide efficient service for some years, particularly if more bogie cars are obtained for the Eaglehawk route.

Car Roster

Cars now in service are (M & MTB Nos. in brackets): Max. Traction Bogie Cars—23-26 (123 138 133 135); Birney Safety Cars—11, 15, 27-30 (ex-Geelong 14 15 27-30); Closed Combination Car—22 (153); Open Combination Cars—2-4, 6-7, 10, 14; Open Combination Cars (converted to "Geelong" type)—12, 16, 19-21 (87 84 185 187 188); Open Combination Cars (converted to "Ballarat" type)—13 (109); Breakdown Car—17; Sprinkler—un-numbered. Total: 24 passenger cars, 2 service cars. Colour of cars: Hawthorn, Green and Cream (formerly dark green with cream panels). Track gauge: 4 ft. 8½ in.

NEWCASTLE—N.S.W.

On the 25th March, two more routes were closed, namely, Derby St. Junction to Merewether (2¼ m.) and Union St. Junction to Glebe (1-7/8 m.) These routes were opened for steam traction as follows: Merewether (Mitchell Street) on 3/11/1902 and extended to the Beach on 21/9/1903, and the Glebe (!), now has a complete set.
route on 19/4/1894. Both routes were electrified in 1924. This leaves only the Adamstown, Racecourse and Waratah routes in operation.

MELBOURNE—Vic.

Industrial disputes caused all M & MTB services to cease for 47 days at the time of writing. It is expected that they will resume about 15th April. VR and SEC tramway services continued running except for one day—14/3/50. However, only traffic and track men are on strike, and in the meantime all damaged cars have been fixed up, and the workshops have 951-956 SW6 class cars available for operation, with bodies up to 969 in various stages of construction. Work has commenced on the new orders for SW6 cars from 970 onwards. Work will begin on a new Scrubber Car which will be numbered "9". Scrubber Car 4 and Freight

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The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:
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THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.
THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.
VISITORS ARE ALWAYS WELCOME.

Spare 206 are now being finally dismantled. The Latrobe Street route is now nearly complete, with only a few yards of track to be put in at the Eastern Hill end, with a crossing at Swanston Street.

Scrubber Car No. 8 returned from the Footscray isolated system on 15/2/50. It was erroneously reported in the February issue that in 1934 "First" No. 8 went to Footscray. Actually this was then "Second" or present No. 8, the earlier car having been scrapped by that time. Commencing on 22nd February, a tramway strike stopped services for some time over a wages dispute. VR Trams still operated, as did SEC services. Several new SW6 cars are completed at Preston except for a few minor parts, and these should be on the road during March. It is anticipated that the Latrobe Street line, now long overdue owing to labour problems, will be ready in June, with the final link of 1/8 mile down Spencer St. being opened three months later. Another 12 vehicles of the breakdown and emergency section are to be equipped with two-way radio. The first two-way radio equipped vehicle was used by the Board as early as 1931.

MELBOURNE—VR Tramways

Owing to the likely shelving of Government plans for a co-ordinated Transport Department, the future of the two routes is placed further into doubt. However, official sources say that much rail is on order for renewals, so at least the St. Kilda-Brighton route will continue for many years. Whether it will come under the M & MTB has not been decided. Meanwhile Sandringham residents are becoming more aggravated and concerned over the local route, and many road accidents have been attributed to the condition of the track and roadway which the VR are responsible for. Of interest to fans was the recent running for a few hours of No. 7, the oldest car on the Brighton route. It will be recalled that operation of S.T. cars in regular use in peak periods ceased in 1942, and they have been virtually out of use except for a few occasions.

BENDIGO—Victoria

The last of the Birney cars from Geelong arrived early in June, 1949. Formerly Geelong 14, it is now No. 11 on the Bendigo roster, and not 32 as previously mentioned. The Birney cars normally operate the North Bendigo-City-Golden Square service. Four of these cars originally hailed from Adelaide, where they ran on the Port Adelaide lines till 1935.

LAUNCESTON—Tasmania

From 15/2/50 the maximum fare has been fixed at 6d., and this applies to terminus-to-terminus fares. The previous highest was 9d. Mr. S. Rowell has been appointed Superintendent of Transport, and Mr. G. J. McElwee in charge of trolley-bus installations. Bogie Car 29, which has run on the flat Newstead service minus a motor Car No. 8 (S.T. Combination) is now out of use and is being robbed for parts to keep other units in a workable condition. It is expected that the Carr Villa route beyond Punchbowl Road will be taken over by buses soon to enable the Council to lay the roadway in concrete for the new trolley buses. Many of the rails from the closed King's Wharf route are being used in the construction of the trolley bus garage.

ADELAIDE—South Australia

A short section of track in North Terrace will be relaid in mass-concrete without sleepers for experimental purposes. Difficulty in obtaining materials is still holding up the 40 new H1 type trams, and the first is not expected for another three months. The allocation of routes for the new trams has not yet been decided. An application will be made to the Prices Commissioner by the MTT for a revised schedule of fares. It was claimed that the Trust is loosing £6,000 a week on the present scale, and hopes have been expressed that the Government will make an early decision on the matter. The South Australian Government is debating the question of altering the present system of loan repayments by the Trust.

HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

BRISBANE ELECTRIFICATION
Early Start Expected

The Queensland Railways are almost certain to commence electrification of the Brisbane suburban railways later this year. The State Government has already approved the scheme in principle; only minor technical difficulties remain to be resolved.

The "technical difficulties" most probably would include finance and the difficulty of obtaining equipment for power station, transmission lines and sub-stations, all of which would probably have to be purchased overseas. The Queensland Government is awaiting a report on technical aspects of the scheme being prepared by the Electric Rolling Stock Superintendent of the NSWR (Mr. J. Moffat), following receipt of plans of the latest multiple-unit electric suburban equipment supplied last year to the New Zealand Railways by English Electric Co.

In the meantime, British contractors likely to submit tenders for plant and equipment have been advised as to the likely requirements to reduce delays usually preliminary to tendering. A possible explanation of the delay in Government authorisation of the project is the conflict of opinion between those who advocate adaptation of existing steam suburban stock to electric traction (following the practice adopted during the Melbourne suburban electrification) and those who advocate starting with completely new equipment specifically designed for multiple-unit electric operation (as in Sydney). Apparently no compromise has been acceptable, for steam suburban stock of standard open compartment type is still being constructed for the Queensland Railways.

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THE MODEL DOCKYARD

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A.E.T.A. NOTES

MELBOURNE BRANCH

Bendigo Tour

Leaden skies and sodden ground failed to damp the spirits of Melbourne AETA members and friends who set out for Bendigo by special railcar on March 17. The route taken was via the main North-Eastern line to Heathcote Junction, thence over the branch to Heathcote, and on to North Bendigo via the line closed to passenger traffic some years ago. (The track on this "goods only" route is in excellent condition, and hopes were expressed that our railcar would be the harbinger of renewed passenger service.) Bendigo was reached dead on time, and an ample meal which awaited us had to compete for popularity with photographic enthusiasm. Bendigo is one of those somnolent stations which burst suddently into frenied activity and one such burrst coincided with our arrival.

Owing to an acute staff shortage, a special tram could not be hired, so the party dispersed for car-riding and sight-seeing in groups. A depot inspection was made during the afternoon, and we cannot speak too highly of Messrs. Evans (Tramway Superintendent) and Irvine (Depot Foreman), who gave up their afternoon to entertain and instruct us. A representative of each class of car not then on the road was run out for photographing, including the scrubber which, being stabled on an unwired road, required the aid of a wandering lead. The interlocking

Letters to the Editor

ONE COUNTRY — ONE GAUGE!

The Editor,
Railways in Australia.

Dear Sir,—The various arguments which have been put forward on the subject of which of the two gauges (Broad or Standard) should be adopted as a standard gauge for Australia are, in my opinion, worse than useless. The authorities have accepted the 4 ft. 8½ in. gauge as the one to be used as a standard. The energy heretofore expended in arguing on which of the two gauges is the superior could be far better spent in urging the present Commonwealth Government to implement the plan put forward by Sir Harold Clapp in his Report on Standardisation in 1945. It would be far more in the interests of Australia as a whole, on strategic grounds as well as economic, if the gauge were standardised at 4 ft. 8½ in. by the efforts of all those who want to see a standard gauge in Australia, than to have it put off further to draw up new plans for a more expensive standardisation at 5 ft. 3 in.

Therefore, I should like to press upon all the vital importance of standardising the gauges as quickly as possible and, as plans are already available, and as it is the cheapest, let it be done as soon as possible.—Yours, etc.,

H. J. DUNN.

Melbourne, Vic.

The Editor,
Railways in Australia.

Dear Sir,—Replying to Mr. Lockyer's letter (R. in A., 1/50), querying some statements of mine about the relative merits of broad and so-called narrow gauge, I would like to make the following observations:—

1. It is a fact that engineering standards and maintenance is the governing factor relating to speed on a railway track; most railway civil engineers concede that point, e.g., South African Railways.
2. Even Mr. Lockyer does not deny that more than 50 per cent. of Australian track mileage (all gauges) is of substandard construction and in a poor state of maintenance. There is no 3 ft. 6 in. gauge track in Australia even approaching South African, or pre-war Japanese, or Javanese standards. There is little enough even of broad and standard gauges. It would be expensive folly to convert existing broad or standard gauge tracks to 3 ft. 6 in., since the cost would be as great (if not greater) than converting 3 ft. 6 in. tracks to wider gauge of improved standard. Added to which, the limitations imposed upon the locomotive designer are far more restrictive on the narrower gauge, even in South Africa.
3. I have a "soft spot" for the broad gauge myself, but for the reasons set out in my previous letter (R. in A., 6/49) the limitations of the available loading and structure gauges in use in Australia are more severe than for the standard gauge. In the case of South Australia, the broad gauge is rather more favourably placed in not having the clearance restrictions encountered in Victoria, or for that matter on the standard gauge lines of New South Wales.

With regard to the question of responsibility for our costly gauge problem, I refer Mr. Lockyer to Parliamentary Papers dealing with the incorporation of the Sydney Railway Company (Vict. 13 given assent to on October 10, 1849). This fixed the gauge at the standard adopted by George Stephenson in England, viz., 4 ft. 8½ in., which, we are told, originated from the "track gauge" of Roman chariots. (It was more probably selected as the railway gauge because of its most general application to the various colliery waggons in use in England in pre-steam traction times.) When the City Surveyor of Sydney, Francis H. Shields, was appointed Engineer to the Sydney Railway Company in 1848, he strongly favoured the broad (or so-called "Irish") gauge and his successor as acting-engineer, Mr. H. C. Mais, also favoured the broad gauge. Indeed he prevailed upon the directors of the Sydney Railway Company to adopt the broad gauge, and after considerable delay an Act was passed on July 27, 1852, authorising the change of gauge of the Sydney Railway Company to 5 ft. 3 in., and this was communicated to the other colonies, probably through the medium of the British Colonial Secretary. Both Victoria and South Australia were planning railways at this time, and realising the desirability of standardisation, they therefore stipulated the 5 ft. 3 in. gauge in their various railway acts in conformity with the amendment to the Sydney Railway Company's act, which provided for stringent penalties should the gauge selected be departed from.

However, upon arrival of Mr. Shields' successor, Mr. Wallace, from England on

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

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equipment of a Birney car and the magnetic brakes of the toastrack car were demonstrated. Anxiety in some AETA circles as to the possible fate of the latter car was allayed when it became evident that the Bendigo staff regard the toastrack with an affection at least equal to our own. The last of her type in Australia, except for a diminishing number in Brisbane, No. 17 is used now as a breakdown car, and tows in bogie cars without difficulty, we were told proudly!

Further car-riding was enjoyed, both before and after tea, after which a pleasant and uneventful return was made to Melbourne via the main Northern line. Impromptu entertainment helped to conclude an enjoyable day, and all are looking forward to the next Special Railcar Tour. (An interesting and unusual excursion is under consideration—details soon.)

Monthly Meetings

A good roll-up is requested for meetings. Don't forget the FIRST FRIDAY IN EACH MONTH.

July 9, 1852, he (Wallace) expressed dissatisfaction at the decision to adopt the broad gauge. He prevailed upon the directors of the Sydney Railway Company, which appealed to the Governor to have the act repealing the standard gauge revoked, and after a very great deal of discussion and delay another act was passed in August, 1855, making 4 ft. 8½ in. the standard gauge, and this intelligence was conveyed to the other colonies.

Meanwhile, however, both Victoria and South Australia had authorised railway construction and passed legislation confirming the 5 ft. 3 in. gauge as the standard, and had ordered locomotives and rolling stock in England, and were therefore indisposed to have the gauge altered again. Representations were accordingly made to have the gauge altered in New South Wales by the British Parliament, without avail. The papers are in the V.R. Commissioners' Library.

For my authority for the foregoing I refer Mr. Lockyer to the Parliamentary Papers of the period; there is little contemporary literature. An article entitled "The Sydney Railway Company" published in Bulletin No. 30 of the A.R. & L.H. Society in April, 1940, offers confirmatory evidence. Of course, it is more a matter of personal opinion as to "who was to blame," but I believe that had not Mr. Shields and Mr. Mais favoured the broad gauge at the outset, the vexed question of railway gauges in Australia might never have arisen, or at least not arisen to the extent of threatening our national existence.—Yours, etc.,

J. L. BUCKLAND.

South Melbourne, Vic.

SYDNEY BRANCH ORGANISES SUCCESSFUL TRAM TOUR

On March 25, the Sydney Branch of the AETA organised a very successful tram tour. Departing from Customs House Siding at 1.30 p.m. in P/R1 type 1517, fitted out with supplementary signs bearing the wording "AETA Tram Tour," the tour covered the North Bondi, Bellevue Hill, Ocean Street, Waverley-Coogee Extension (site of Sydney's first electric tramway), Coogee, La Perouse, Daceyville, Bourke Road-Dowling Street, West Kensington lines, returning to the city at 5.45 p.m.

Fifty-four members and their friends attended and spent a very enjoyable afternoon; ample opportunity was afforded the camera fraternity to photograph objects of tramway interest, and the thanks of the Sydney Branch go to those Council members who did so much in organising this excellent outing.

NEW ZEALAND

Proposed Branch

The Council of the AETA wishes to thank all those New Zealand members of the Association, and their friends, who have responded to the request for views relating to the possible formation of a New Zealand Branch of the Association.

The many helpful suggestions received have been of material assistance to the Council in the formation of its plans.

Whilst the move would seem premature at the moment, it is hoped that a not too distant date will see such a branch established.

Auckland Representative

With the impending departure of Mr. Doug. Fallwell, who is to take up an appointment in Sydney, the Association will be represented in Auckland by Mr. Graham C. Stewart. Mr. Stewart is well known for his active interest in rail transport and tramways in particular. He is a journalist.

Whilst Mr. Fallwell's departure will be a distinct loss to the small group of Auckland members, his appearance at meetings of the Sydney Branch is anticipated with pleasure. Mr. Fallwell had visited most New Zealand transport undertakings and kept our editor well supplied with news and statistics.

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Fan Mail

N. H. WALTER, Kingsgrove, N.S.W.—Thanks for thoughtful gesture — actually not intended to start until January reminders. You are one of several airlines readers; maybe we'll see steam-hauled Skymasters yet!

J. L. DINGLE, Mascot, N.S.W.—Welcome to the select circle. Hope to print diagrams from time to time which should help you.

W. J. LANE, Abbotsford, N.S.W.—Thanks for advice. Glad you have joined the Society.

WILLIAM R. SMITH, Philadelphia, U.S.A.—See notice in "Wants" column; hope you find a correspondent. Trouble is there are 20 of you to one of us! Should be glad to see a copy of your mag.

S. G. HARDING, Chatswood, N.S.W.—Thanks for information just received after long delays en route. Using this issue or next.

D. H. SMALL, Strathfield, N.S.W.—Thanks for letter and information. Correction passed on to Bulletin Editor.

A. W. MOLONY, Ganmain, N.S.W.—Will definitely use article; most valuable, thanks. "Question Box" editor is away at present; your request will provide a suitable welcome for his return!

H. J. DUNN, Melbourne, Vic.—Change of address noted.

J. MOSSOP, Seaford, Vic.—Change noted. Thanks for good wishes.

E. J. WOLFF, Schwelm, Germany.—Quite happy to continue the arrangements.

Question Box

In view of the continued absence overseas of our Question Box editor, and not knowing the answers ourselves, we invite readers to submit answers to the following questions:—

"LIGHT ENGINE," a Tasmanian reader, asks:—

There is a very tall signal mast at Leighton Crossing, North Fremantle UP Distant (Western Australia). Could any reader tell me the height?

Where is the tallest signal mast in the Commonwealth? What is its height? (I mean a straight-out post, not a stick on a gantry, or an ordinary post on the side of a cutting to give additional height). There are a number of beauties in the Perth suburban area, but that mentioned is about as tall as I've seen—probably pushed well aloft to stand away from the background of harbour lights, etc., in the near distance.

READERS' WANTS

Member of the A.R.L.H.S. and bona fide subscribers to this journal may have small advertisements inserted at the nominal charge of 1/- for five lines. Forward postal notes or stamps (up to 2½d. value) with advertisement to the Managing Editor.

PHOTO EXCHANGE

O. R. Cummings, 23 Main St., Aymesbury, Mass., U.S.A., wants to exchange prints of tramways and interurbans for similar Australian or New Zealand pix.

William R. Smith, 6507 Van Dike St., Philadelphia, Pa., U.S.A., has pix of all electric lines—trams, interurbans, trains—in and around Philadelphia; will exchange for Australian negs. or prints, size 620.

Canadian pix will be exchanged for Australian electric traction pix by W. C. Bailey, 2006 Queen St. East, Toronto 8, Ont., Canada.

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Railways in Australia

and

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IMPORTANT NOTICE

Statements that "Railways in Australia" will cease publication with this issue are unauthorised and completely untrue.

Continued late publication may be expected for the present and this is regretted. --- --- --- -

Volume III, No. 4. April, 1950

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OUR COVER PICTURE

F1-class tramcar of the Municipal Tramways Trust, Adelaide, S.A. This is claimed to be the first car on which a mobile news poster was carried in Australia — a feature introduced last year by the Adelaide "News" (Courtesy "Outdoor Advertising").

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WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

V.R. GIPPSLAND ELECTRIFICATION

Latest Details

By Our Electric Railway Editor

An order has been placed with the English Electric Co. Ltd. for the supply and delivery of 17 electric locomotives for use on the Gippsland line of the Victorian Railways, at a cost of £1,316,000. The locomotives will be powered by six 750-volt motors which, by means of two weak-field tappings, will give nine operating speeds, with a continous rating of 2100 h.p.

It is planned to operate trains of 1100 tons from Yallourn to Melbourne (via the direct line to Moe now under construction) by a single unit; whilst trains from the projected Morwell Briquette Factory will be of a similar load hauled by two units in multiple over the 1 in 50 grades of the Haunted Hills section to Moe, where one unit will be cut off.

As the output from Morwell increases, it is intended to provide a relocated line between Moe and Morwell, which will give a 1 in 110 ruling grade for Up trains by skirting the Haunted Hills and passing about one mile south of Herne's Oak. This arrangement will give duplication between Moe and Morwell, for the existing line via Herne's Oak will be retained as the Down road.

For the power supply to the line the State Electricity Commission will provide tappings from an existing 22,000 volt line to each sub-station. In all, sixteen sub-stations, and thirteen tie-stations will be provided at sites indicated on the attached list. At present, 32 mercury-arc rectifiers are on order from the British Thomson-Houston Co. Ltd., of which twenty are for the Gippsland line, and twelve for replacement and increasing capacity on the suburban system.

The deviation between Warragul and Nilma will shorten the line by about three chains, and will avoid the present 12-chain curve on a 1 in 50 grade at the Home signal on the Down end of Warragul yard. On the new line, there will not be any station between Warragul and Darnum.

Work has also commenced on the conversion of Drouin station to an island platform by running the future Down line on the North side of the existing platform. At the Down end of the station, the overline Korumburra Road bridge is to be entirely rebuilt to give a wider roadway, to provide for the island platform, and to give the additional clearance required for electrification.

For the passenger services it is proposed that the existing suburban stock will run on the local trains between Dandenong and Warragul after running express from Flinders Street.

The following list shows sites and mileages from Melbourne of proposed sub and tie stations, tie stations being indicated by (T), on the Gippsland electrification project.

Dandenong East, 19m61c; Hallam (T), 22m40c; Narre Warren, 25m42c; Beaconsfield (T), 28m15c; Officer, 31m02c; Pakenham West (T), 33m75c; Pakenham East, 36m68c; Nar Nar Goon (T), 39m54c; Tynong, 42m31c; Garfield (T), 45m12c; Bunyip, 47m75c; Longwarry (T), 50m64c; Longwarry East, 52m32c; Drouin, 56m69c; Warragul, 61m35c; Darnum (T), 64m52c; Yarragon, 67m56c; East Yarragon (T), 70m68c; Trafalgar, 74m05c; East Trafalgar (T), 77m17c; Moe, 80m40c; East Moe (T), 83m40c; Herne's Oak, 86m52c; Morwell (T), 89m26c; East Morwell, 92m12c; West Traralgon (T), 94m39c; Traralgon, 96m66c.

On the Moe-Yallourn direct railway (under construction) are: Yallourn West (T), 82m60c; Yallourn, 85m00c.

(See "High Voltage" for other electrification projects.)

A2-class 4-6-0, No. 843, starts a Down Freight out of Colac on the Victorian Railways. John Buckland was behind the camera on this occasion in April 1942. (Courtesy "Truck & Bus Transportation.").

TAS. TO INVEST ADDITIONAL £3½ MILLION IN RAIL MODERNISATION

The Tasmanian Transport Commission has announced plans for expenditure of a further £3½ million on rehabilitation and modernisation of the Tasmanian Government Railways. This is additional to a £3 million programme already in hand.

The Commission has in mind further improvements to tracks and passenger rolling stock which may cost another £700,000. Preliminary surveys have already been made of a long-planned deviation of the Hobart-Launceston main line via Apsley, to eliminate severe curvature the heavy 1 in 40 ruling grades and the tunnel at Ryndaston. Other trial surveys are being made to eliminate other heavy grades on the main line which limit the locomotive haulage capacity and hence the traffic capacity of the lines.

Included in the plans is a modern diesel maintenance workshop for servicing and repairing diesel locomotives and railcars. This will be erected adjacent to the present workshops at Launceston and will cost £100,000. The shop will be a steel and reinforced concrete building with an area of 24,000 sq. ft. A separate diesel maintenance shop is urgently necessary, as in 1952 diesel and diesel-electric power on the Tasmanian system will have increased from 3500 h.p. to a total of 24,000 h.p. At a cost of £430,000, some 380 freight cars have been ordered, some from outside builders, and many components will be supplied by contractors. Of the total of 1976 freight cars in service on the system, 933 are over 50 years old. Only 416 new freight cars have been installed in the past ten years, despite the increase in traffic, which has only been met by better car and locomotive utilisation and more efficient train operation.

Proposals for main line electrifica-

tion in Tasmania cannot yet be entertained because of the relatively low traffic density. Use of diesel railcars and diesel-electric locomotives is more economic in present and foreseeable future circumstances.

FREIGHT CAR DELIVERY LAG HINDERS N.S.W.R.

Of a total of 3825 freight cars of all types ordered from local manufacturers in 1946, only 1946 units had been delivered by the end of 1949. Output from the Department's own workshops has been similarly hindered by material shortage, coal shortage and lack of skilled manpower. Of orders placed by the Department since 1946, practically nothing had been delivered to the end of the year. Orders were recently placed overseas for 500 bogie 40-ton open cars from Wagenfabrik Talbot, Aachen, Germany, to cost £595,000; 300 bogie MLV type louvre cars to cost £505,700 from Birmingham Railway Car and Wagon Co. Ltd.; and for 200 PHG bogie freight brake vans to cost £845,000 from Metropolitan Cammell Car and Wagon Co. Subsequently the Department has called for tenders overseas for supply of 1600 bogie 36-40 ton capacity coal hopper cars, 150 MRC bogie refrigerator cars, 40 electric locomotives, and 10 diesel-electric road-shunting locomotives.

1000 H.P. DIESEL SHUNTERS FOR N.S.W.R.

The Department of Railways, New South Wales, has placed an order with the British Thomson-Houston Co. Ltd., to supply ten diesel-electric shunting locomotives of 1000 horsepower capacity.

The underframes, cabins and bogies will be manufactured by the Metropolitan-Cammell Carriage & Wagon Co. Ltd., whilst the complete electrical equipment will be made and installed by the British Thomson-Houston Co. Ltd. Each unit will be fitted with two Davey-Paxman engines of 500 h.p., each directly coupled to a B.T.H. generator to supply the four motor traction equipment.

V.R. LOCO, ROLLING STOCK NEWS

Twenty of the N-class 2-8-2's ordered from the North British Locomotive Co. should be on the water by the time this appears. It is thought that the North British Co., which is required to deliver the locos on rail at Melbourne, will erect special gear, probably at Williamstown, for unloading these machines.

Approaching completion at Newport Workshops are new steel cars Nos. 15 and 16 AS, also the new State car, No. 5, which is an AS car with the interior suitably re-designed. The interior of this car is notable for the beautiful woodwork fitted.

Among rolling stock destroyed or damaged in a recent fire at the Bendigo Carriage Shed was No. 1 ABW, a 1st/2nd class, 4-wheel bogie, side corridor car, which was burnt out.

KOONDROOK TRAMWAY

With business brisk, the poor condition of the locomotives of the Kerang - Koondrook Tramway has been a major problem for some time. The ex-V.R. D-class loco is at Bendigo in a dismantled state and the ex-T class 0-6-0 is stored at Koondrook. This has necessitated hiring a D3 4-6-0 from the V.R. two days weekly, the track having been improved to enable these machines to run. The D3 comes from Swan Hill depot. Although externally well-kept, the T is unlikely to run again, we are advised. Van goods are handled in an old ex-S.A.R. 4-wheel truck towed by the famous rail motor (see previous issues).

MT. LYELL RAILWAY Oil-Burning Experiment

Engine No. 3 of the Mount Lyell Mining and Railway Co. (Tasmania), an 0-4-2T, has been converted to burn oil experimentally. Dieseline oil is used, a specially-made oil tank having been fitted in the coal bunker space. The top of the tank is level with the cab roof; a steam pipe from a valve in the cab feeds a steam coil in the tank. Filling is carried out by hand pump in the loco sheds from 44-gallon drums.

Know it?

GOOD BOOKS for LOCO FANS and TRAIN LOVERS

"LOCOMOTIVES: Their Construction, Maintenance and Operation," 5th Edition, 1946 (2 volumes with 442 pages, 10¾ in. x 8½ in.). This is a publication with specialist information required by loco-men for efficiency in their work and is copiously illustrated with coloured plates, drawings, diagrams and photographs. It has been specially compiled for the use of all interested in the construction, running and maintenance of steam locomotives. Price, £4.

"WORLD RAILWAYS," 1949 Edition (13 in. x 8 in.). A comprehensive survey of the principal railway systems of the world, giving their field of operations and equipment. Illustrated with maps, photos and dimensioned drawings; with tables of data on locos, rolling stock, etc. More than 1000 illustrations. Price, £5.

"THE MODERN WORLD BOOK OF RAILWAYS," 1948 Edition (160 pages, 10½ in. x 8 in.). This book deals with railways in many parts of the world. Illustrated with 8 colour plates and many photos. An ideal gift for a lad, but also suitable for adult reading. Price, 13/9.

"THE WORLD'S RAILWAYS AND HOW THEY WORK" (317 pages, 8¾ in. x 5¾ in.). This book describes railways in most parts of the world and is crammed with excellent photos and sectional drawings to describe various equipment. A good book for adults, also ideal for children. Price, 13/9.

"RAILWAYS, SHIPS AND AEROPLANES," 1946 Edition (317 pages, 8¾ in. x 5¾ in.). Contains photos and sectioned drawings, with interesting information about the three subjects mentioned. A worthy companion for "The World's Railways." Price, 13/9.

"STEAM UP," 1949 Edition (80 pages, 9¼ in. x 7 in.). Canon Treacy captures all the life of engines in motion, with excellent photos and witty essays. Suitable for adult and youthful reading. Price, 14/8.

"STANIER PACIFICS OF THE L.M.S.R.," 1948 Edition (64 pages, 7¼ in. x 5 in.). Tells the story of these famous locos and gives their mechanical details. Outstanding trips are described and timings given. Price, 4/9. This book is now out of print, so hurry if you want a copy.

"BRITISH ELECTRIC TRAINS," 2nd Edition, 1949 (132 pages, 8½ in. x 5½ in.). This book gives descriptions and up-to-date information about electrains and electrified lines in Britain. Price, 8/4.

"A.B.C. OF BRITISH ELECTRIC TRAINS," 1948 Edition (68 pages, 6¼ in. x 4¼ in.). This book is similar to "B.E.T." Price, 2/9.

"RAILWAY PICTORIAL AND LOCOMOTIVE REVIEW" (20 pages, 11 in. x 8½ in.). A monthly magazine, printed on heavy, glossy paper. Contains articles, photos and general news about British and Empire railways. Price, 2/3.

"RAILWAYS" (21 pages, 9¾ in. x 7½ in.). Another monthly magazine, printed on glossy paper, with photos, articles and general news about British railways. Price, 1/6.

"TRAINS ANNUAL" for 1950 (96 pages, 9½ in. x 7 in.). Contains interesting information and superb photos dealing with railways in Britain and elsewhere. Price, 10/6.

"SHORT HISTORY OF MECHANICAL TRAVEL" (Vol 2, Rail), 1949 Edition (150 pages, 7 in. x 4¾ in.). This book gives a brief history of railway developments, from 1804 to 1947. It deals with all types of motive power, coaches and rail-cars. Illustrated with photos and sketches. Price, 17/6.

"LIGHT AND NARROW-GAUGE LOCOMOTIVES," 2nd Edition, 1948 (27 pages, 7¼ in. x 5 in.). Has brief descriptions and principal dimensions of narrow-gauge motive power in Britain. Illustrated with drawings and photos. Price, 4/2.

"TRAINS IN COLOUR" (16 pages, 9¾ in. x 7½ in.). An excellent book for small children. Printed on heavy, glossy paper and illustrated with coloured pictures and drawings. Information about British railways is given in a simple and interesting manner. Price, 2/2.

"THE RAILWAYS OF BRITAIN—Past and Present," 1948 Edition (117 pages, 8½ in. x 5¼ in.). Written by O. S. Nock, the greater portion of this book is concerned with the modern railway network, its organisation, rolling stock, types of loco signalling systems and speed records. Copiously illustrated with coloured prints and good photos. Price, 23/6.

I have a stock of railway books of 65 different titles. If there are any other publications (not listed in this advertisement) either of British, American, French or German origin, let me have all details and I will try to obtain it for you.

Write to: J. O. SMITH,
22 Glenore Rd., CANTERBURY, N.S.W.

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The Overland

If dollar problems are resolved sufficiently to permit the purchase of locomotives from the United States, diesel electric haulage will be normal for the "Overland" from Adelaide to Melbourne by 1952.

This was stated by the Chief Draughtsman of the South Australian Railways, Mr. R. A. Crossman, during a recent visit to Melbourne. It was planned, he added, to make the "Overland" the best overnight train in Australia. As part of this project the fourth Roomette car will be in use soon on this run.

DELAYED NEWS ITEMS

Owing to lack of space, many minor news items have had to be omitted from previous issues. A selection of those still of interest follows:

N.S.W.R. Notes:

Following the successful rebalancing of driving wheels of 35 and 36-class passenger locomotives, and subsequently 53 and some 55-class freight locomotives, which may be operated at higher speeds than previously allowed, even on secondary lines, the Mechanical Branch last year experimentally rebalanced the driving wheels of two 32-class engines—Nos. 3281 and 3328—for testing. Should this experiment prove equally satisfactory it is likely that many 32-class engines may be rebalanced, particularly in view of their now being the heaviest locomotives permitted to work passenger trains over the restricted sections of the North Coast line from Maitland-Casino. North of Casino 35-class engines are still permitted to operate passenger trains through to South Brisbane, but south of Casino there is a prohibition of 35-class engines working passenger trains, but they may work freight trains subject to a speed limit of 30 m.p.h.

Electric headlights have been applied to further locomotives as follows:—5455, 5514, 5516, 5524, 5528, 5558, 5550, 5563, 5578, 5553, 5595, 5600 5612, 5615, 5617, 5619. Three more C-30T class tender engines have been superheated: No. 3129, in May, 1949; No. 3009, in June, 1949; and No. 3050, in 10/49. Three 30-class tank engines—Nos. 3042, 3085, and 3084—which temporarily had their boiler pressure increased to 175 lb. in anticipation of their working the air-conditioned Cessnock Express between Broadmeadow and Cessnock, have subsequently been restored to normal 160 lb. pressure.

The isolation typical of most stations on the Commonwealth Railways East-West transcontinental line is evident in this view looking east from Cook by David Burke. Only the Loco. and a handful railwaymen's cottages break the monotony.

With the completion by A.I. & S. Ltd. of their overhead crossing of the Illawarra main line at Mt. Kembla Crossing on their Nebo Colliery line, the level crossing and signal box at Mt. Kembla were abolished on October 23, 1949. Boom gates have been provided at the level crossing of the A.I. & S. Jetty line with the main Wollongong-Port Kembla road.

The Ballina branch was dismantled from Booyong Junction to Ballina, and Booyong Junction signal box abolished as from October 26, 1949.

On September 20, 1949, the sections St. Mary's - Dunheved - Rope's Creek were converted from double to single line with Miniature Electric Staff working in place of Autos on Down and Track Block on Up line. The Down line was subsequently dismantled. Dunheved is a crossing station.

Since September 13, 1949, Wallerawang Colliery line has been worked by Electric Staff from Wallerawang East Box - Weighbridge Loop (arranged for Auto working) in place of Ordinary Train Staff. On September 21, M.E.S. working was extended from Weighbridge Loop to Commonwealth No. 2 Colliery, which latter is not a crossing place. The two-arm semaphore signal (one of the few surviving) at Mullengudgery (Main West) has been dismantled.

THE OLD AND THE NEW. With the introduction of modern Walker railcars on the Victorian Railways, the AEC rail motors are a vanishing race. (Above) Rail Motor No. 4 which has just been pensioned off after running 400,000 miles since being placed in service in May, 1923. (Left) 153 h.p. Walker railcar and trailer. These cars, together with the lighter 102 h.p. cars, have revolutionised passenger traffic on many branch lines.

(Next month we hope to illustrate the new large articulated railcars about to be introduced for heavy branch-line traffic and main-line roadside work.) (Courtesy Victorian Railways.)

Engine Pictures

AN OLD-TIMER THAT STAGED A COMEBACK. No. 1219, a 12-class 4-4-0 of the New South Wales Railways. One of a number of similar engines reprieved from the scrapper's torch, No. 1219 hauled light, fast branch-line trains (see article on C-79 class in Bulletin section). Note the tender, handed down from a 32-class 4-6-0 when that class received larger bogie tenders. Photo was taken by Eric Law at Tamworth on 5/12/38 (courtesy former "Railway Enthusiasts' Magazine").

According to Mr. J. L. Southern, of Wollongong, N.S.W., unconfirmed reports suggest that one or both of the former Howley's Glenrock Colliery 0-6-0 Tank locomotives (purchased in 1946 by John Kennaway, Newcastle) have been sold to either B.H.P. Steelworks or Commonwealth Steel Co. They were Howley's No. 1 (Hudswell Clarke 290 built 1886) and No. 2 (Manning Wardle & Co. of unknown date). Another locomotive bought by Kennaway about the same time was former Sydney County Council No. 2 (Hudswell Clarke No. 1530 of 1926) which formerly worked at Bunnerong Power Station. This is a larger 0-6-0 Saddle Tank.

What is believed to be the oldest locomotive still working in Australia is now owned by Stewarts & Lloyds [illegible], Newcastle. In 1941 they purchased No. 2 from J. & A. Brown's Richmond Vale Railway — a small 0-4-2 Saddle Tank built by R. & W. Hawthorn (No. 948 in 1856). This was reboilered, fitted with oversize buffers and automatic couplers and went to work shunting the Newcastle pipeworks under the name "Green Hornet." (When last seen it was neither green, nor visibly named reports a Newcastle correspondent—Ed.) Latterly this machine has been seen without the trailing wheels, making the wheel arrangement 0-4-0, with considerable end overhang.

Mr. Southern also reports that A.I. & S. Port Kembla Steelworks have five 19-class 0-6-0 locomotives on hire from N.S.W.R. Latest reports suggest the first diesel-electric shunters will be in service in March. For modernising A.I. & S. collieries a total of 15 diesel-mechanical locomotives and 520 bogie axle-less 10-ton mine cars are on order for use on 3 ft. 6 in. gauge underground haulage lines at Bulli, Keira, Kemira, Nebo and Wongawilli collieries.

The ex-Public Works Department locomotives at Port Kembla have so far not been renumbered. No. 80 (ex N.S.W.R. 2-6-4T) arrived back after overhaul at Eveleigh in June, 1949, No. 28 (0-6-0T) in October, with standard N.S.W.R. red lining, etc. No. 28 has been reboilered with an 18-class boiler. No. 1804 has been returned to Junee as 1076 coal grab, whilst the other four 18-class 0-6-0's are still working at Port Kembla.

Mr. T. C. Gun, General Manager of Silverton Tramway Co., has supplied the following information as to locomotives loaned by the Company to South Australian Railways during the war. No. 2 (Y-class 2-6-0) from March, 1942-January, 1943; No. 13 (Y-class) from March, 1943 - August, 1945; Nos. 15 and 16 (Y-class superheater) from March, 1942, until July, 1945 and March, 1945, respectively; and No. 20 (A-class 4-6-0) from March, 1942, until April, 1944.

Two other Y-class (numbers unspecified) are at present on loan to S.A.R. No. 2 was subsequently withdrawn from traffic and scrapped. During the war it was employed shunting at Terowie (gauge transfer) Yard, S.A.

HIRING LOCOMOTIVES IS PROFITABLE SIDELINE

Hiring locomotives to private owners has long been practised by the NSWR; usually any number of available 19-class 0-6-0's, 20-class 2-6-4T's, 18-class 0-6-0T's and 10-class 2-4-0T's are eagerly sought after by Australian Iron and Steel Ltd., Southern Portland Cement Co., Sydney County Council and other operators of private industrial railways in New South Wales. During the recent war, the U.S. Army Transportation Corps operated a circular loop line in the vicinity of Sandown (Sydney) with hired NSWR equipment consisting of one of the ex-PWD Vulcan saddle tanks (1022 or 1023) and an end-loading passenger car. A full American train crew consisting of Engineer, Fireman, Brakeman and Conductor manned this diminutive train! Before the NSWR took over the operation of the PWD lines at Port Kembla on January 1, 1949, the PWD was a constant customer for hired engines.

LEVEL CROSSING ACCIDENTS

The Baltimore & Ohio Railroad studied level crossing accidents over a period of six months recently. The statistics give much food for thought. 96 per cent. of motorists and pedestrians involved were familiar with the crossings at which the accidents occurred. Only 4 per cent. of the motorists were from other districts. Most failed to heed warning signals, even driving or walking around gates or watchmen when other cars or people were waiting. Private cars were involved in 67 per cent., motor trucks in 25 per cent., pedestrians in 6 per cent. of the accidents. In most cases, trains were standing still, or moving at less than 25 m.p.h.

NEWS EDITOR APPOINTED

We are very happy to announce that Mr. D. C. Wishart will be taking over the duties of Railway News Editor in the near future—it is hoped, with the next issue. Readers are urged to give Mr. Wishart every co-operation in his somewhat onerous task. Send in every possible item of railway news.

As Mr. Wishart's duties require him to travel extensively, mail should be forwarded to us, addressed "Railway News Editor, Traction Publications, 29 Seymour Grove, BRIGHTON BEACH, S.5, Vic." It will be forwarded to Mr. Wishart regularly.

WATTLE PARK

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R. IN A. TO CONTINUE

We understand that statements have been made that this magazine will cease to appear after this issue.

Such statements are unauthorised and completely without foundation.

Certainly we are meeting heavy difficulties, and issues will probably continue to appear behind schedule for some time. We believe, however, that readers would prefer their magazine late rather than not at all.

(Incidentally, news items are brought up to date, as far as possible, prior to going to press.)

The best way to keep the magazine running is to encourage your friends to subscribe, and to renew your own subscriptions promptly.

ASSOCIATION WITH ARLHS DISCONTINUED

As from the May issue, the Bulletin of the Australian Railway & Locomotive Historical Society will appear in separate form, and it will be necessary to join the Society in order to obtain the Bulletin.

The Society found it necessary to take this step for several reasons, principally our inability to publish this magazine on time.

It is regrettable that correspondence and publicity issued by the Society contained several incorrect statements, and that certain members of the Society should have seen fit to bear malice against us.

As many readers are aware, we have always made every endeavour to get the magazine out on time, but strikes, electricity shortages and many other factors, combined with chronic financial problems, have made this impossible.

The many imperfections in this journal are appreciated only too well. Some have been remedied as we progressed. Others will be eliminated as and when possible.

Many changes will appear with our next issue, and we hope you will like them.

Finally, our good wishes go to the Society, with whom we shall always be pleased to co-operate in every way.

We hope that ARLHS members, in turn, will subscribe to "Railways in Australia." As a special offer, ARLHS members may take out new subscriptions at the old rate of 12/6 per annum until 15th July next.

The opinions expressed by contributors to "Railways in Australia" are not necessarily those of the publishers, nor of the Australasian Railway and Locomotive Historical Society. The Society does not accept responsibility for any matter not contained in the "Bulletin" section.

BACK NUMBERS

While we can still supply copies of most back numbers, stocks of some issues are getting very low. The following are available at the time of writing:—

Railways in Australia

August, 1948, to present date (1/- each).

Tram Tracks

November, 1947, to June, 1948; August, 1948 to August, 1949—some issues without covers (6d. each).

All prices include postage.

BOOK REVIEW

THE BIG FOUR

England was the birthplace of railways, and British railways have long exercised a fascination over people in all parts of the world. When the 120 companies were merged in 1923 into four great systems, many of us sighed regretfully for the vanished glories of our favourite lines. Now that all mainline railways in Great Britain have passed into the hands of the government, an era of efficient but unglamorous uniformity has begun. Of the "Big Four" each had its own fascinating practices and idiosyncrasies, and Mr. Greenleaf, in his latest book, gives a faithful account of these. Written just before nationalisation, the book records much that might have passed into the limbo of things forgotten. Every aspect of the history and operation of these railways, with their locomotives, rolling stock, permanent way and ancillary services is covered in detail and with a wealth of pictures—many in colour. Electric railways, often passed over briefly, receive honourable mention, as do the railway steamship services.

(228 pp., 9½ in. x 7 in., stiff cover. Our copy, McGill's Authorised Newsagency, 24/6.)

THE MODEL RAILWAY HANDBOOK
W. J. Bassett-Lowke

Mr. Bassett-Lowke's name is too well-known in the model field to require further introduction. Previous editions of his "Handbook" are on the shelves of discerning modellers, and those who require a comprehensive review of ready-made models will be glad to have this new and completely revised edition. Although frankly propaganda for Bassett-Lowke products, the scope of the book and its many illustrations are in themselves sufficient justification for its purchase. (160 pp., 9 in. x 6 in.)

(Our copy, Meadmore Model Engineering Co., 12/6.)

RAILWAY BOOKS

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MEADMORE MODEL ENGINEERING CO.
163, Exhibition Street,
MELBOURNE, C.1.

Whilst we do not make a practice of illustrating railway accidents, this picture is something of an exception. On 23rd February last, engine No. 729 crashed into the rear end of a Gawler passenger train near the Tube Mills station, wrecking cars Nos. 85 and 101. Reader Owen Thomas was on the spot with his camera a few minutes after the accident occurred.

ELECTRIC TRACTION

TRAMWAY — TROLLEY BUS — ELECTRIC RAIL

Formerly published separately as "Tram Tracks"

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

MELBOURNE—Victoria

After 60 days' strike, the longest in Australia's transport history, M. & M.T.B. tram and bus services resumed on the 24th April. Owing to the state of the track, coupled with a temporary staff shortage, it was only possible to maintain an 80 per cent. service for several days. The "All Night" cars resumed on 1/5/50 with a 75 min. headway on 9 routes. Full all-night running will later be restored. Preston Workshops continued operation during the industrial troubles, and SW6 cars 951-957 have been outshopped, and bodies up to 969 are in stages of construction. 969 will complete the original order for 120 of the SW6 class. Further cars have been authorised, and will follow on.

Only the westbound track, between Spring Street and Russell Street and the Swanston Street crossing remain to be completed in Latrobe Street. The Board has authorised the construction of a new Scrubber car, to be numbered "9," which will replace No. 4 scrapped during April No. 4 was built about 1917 by the P. & M.T.T. as a straight-sill single-truck combination car, numbered 96. On M. & M.T.B. acquisition it was classed as "K," and finally, in 12/1928, was converted to a Scrubber. A threatened fare increase to overcome the serious loss in revenue over the strike period has been decided against by the Board.

NEWCASTLE—N.S.W.

The last stages of bustitution are being completed. On 17/4/50 the line from Adamstown Junction to Adamstown (1¼ m.) was closed. This leaves only the Waratah line in regular service, and the Racecourse Branch. The Adamstown Branch was opened for steam traction on 13/8/1900, and electrified on 2/2/25. The remaining service to Waratah was a late construction, being opened on 20/1/1915 and electrified on 6/4/1925. It is 2¼ m. long (from the mainline), the terminus being 5 m. from Newcastle. There has never been a regular passenger service to the Racecourse. This branch, which now ends in a large balloon loop, was opened on 27/4/1907 and electrified on 14/11/25.

SYDNEY—N.S.W.

The R/I car (1958) which has been fitted with trucks having resilient wheels from Brisbane, has been running on the City shuttle between Railway and Circular Quay. Notices attached draw the public's attention to the car's silence. L/P class cars (70 seater, originally L. & F. type, built 1901-1902) are slowly fading out and not many remain in service. The only "K" class now regularly running are at North Sydney for the Neutral Bay branch. Rumours suggest that pressure is being applied to restore the Ryde tram service beyond Gladesville which ceased in 12/1949. It is expected that the first of the 250 new R1 class trams will be in service soon.

BRISBANE—Qld.

Car 503 entered service in 4/1950. This makes the 104th of these streamlined cars, the first of which came in 1939. Sliding doors were introduced into the original design with 473 in 1947, and upholstered seats came with 483 in 1948. Cars from 497 onwards have the new resilient wheeled trucks which have been designed locally, and are said to be cheaper than the P.C.C.

ADELAIDE—S.A.

A further fare rise has become operative from 30/4/50. First section fare remains at 3d., but the second is now 5d., third is 6d., and so on.

LAUNCESTON—Tasmania

The first trolley-bus is in the City, but so far little has been done to erect the overhead and lay stretches of concrete road. Rails from the closed King's Wharf route are being utilised in the construction of the trolley-bus garage.

MELBOURNE—V.R. Tramways

Persistent rumours imply that the V.R. will make some effort to rehabilitate the worst section of the Black Rock tracks, and are only waiting on labour. Local authorities have drawn the V.R.'s attention once more to the serious nature of the road service, and claim that accidents are now a distinct possibility. The state of affairs on the Brighton route are much better. The cars are in excellent condition and the road surface is being kept in reasonable repair. Two of the Black Rock cars have been completely overhauled, and the Brighton car No. 43 will remain at the "southern" depot till all have been done.

SYDNEY'S "SILENT" TRAM

R1 class, No. 1958, has been fitted with resilient wheels and trucks obtained from Brisbane. No. 1958 is shown leaving Circular Quay. A view of one of the trucks is shown above; they are painted silver, the rest of the car being in standard colours—light green and cream with black lining and maroon frames, steps, etc. (Photos by Noel Reed.)

Typical scene at Circular Quay, Sydney, prior to construction of the elevated section of the City Railway. Work on the Quay Station is now well advanced. (Courtesy "Truck & Bus Transportation.")

KALGOORLIE—W.A.

Available for service at 1/1/50 are four bogie cars; 12 S.T. Saloons, including 6 "Sedan" type and 7 Trailers. Service stock comprises an Overhead Line Car and Trailer. Details will be given in a future issue.

MISCELLANEOUS NEWS

Three extensions have taken place in Oporto, Portugal's second city, since 1946. The fleet comprises 191 trams, 25 trailers, and the systems embrace 51 miles of route. A flat-rate system of fares is to be introduced by B.E.S.T. in Bombay, India. For trips under a mile the fare will half-an-anna (½ penny) and over mile then 1 anna. One route will, in fact, give an eight mile journey for 1d.! This new system is expected to check ticketless travel tnd thus increase the Company's revenue.

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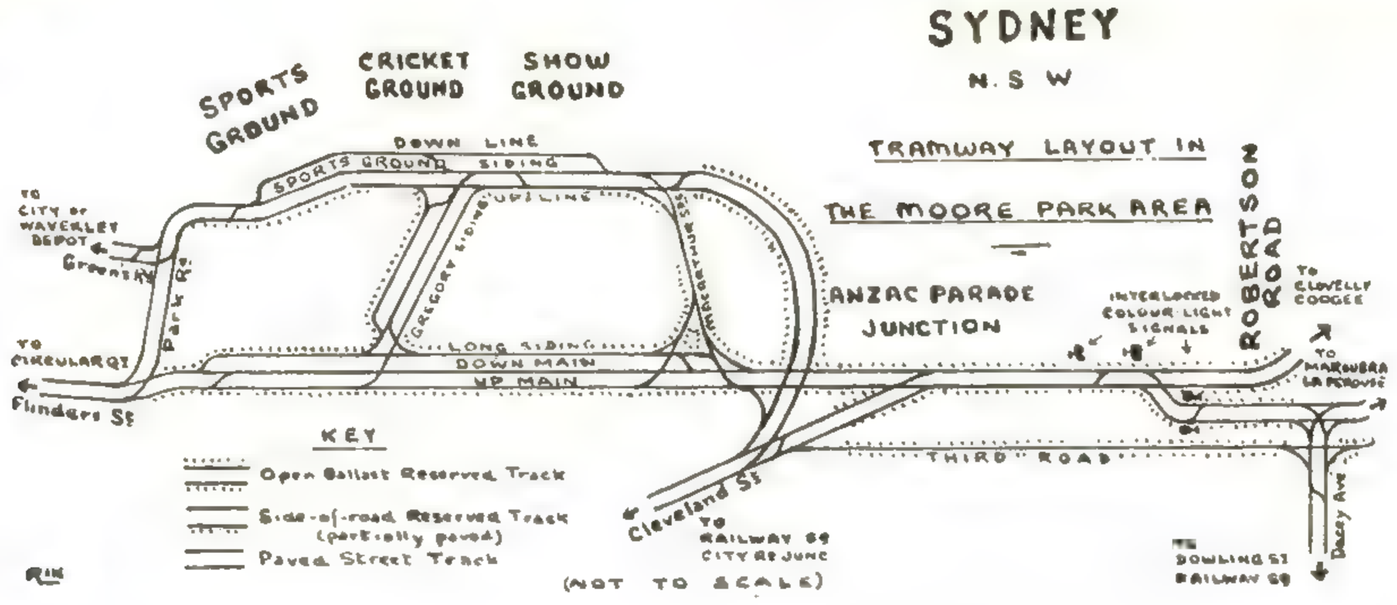

INTERESTING TRACK LAYOUTS
1. Moore Park, Sydney

This extensive track layout comes into full use every year during the 10-day Royal Easter Show. Sporting and other events, both day and night, also require extensive use of the loops. The third road is used for express cars from nearby Randwick Racecourse. At other times it is used for overnight storage of surplus cars from Dowling Street Depot, or for off-peak stabling of multiple-unit cars which are coupled to regular cars for peak-hour traffic. Macarthur Siding is used also for this purpose.

AN APPEAL

We have to rely mainly on correspondents for news of tramway services in W.A. and in N.Z. Small incidents which may seem commonplace to readers may be of great value to interstate readers. We ask especially for current news, etc., on tramways in Fremantle, Perth, Auckland, Wanganui, Christchurch, Dunedin, Invercargill, and Wellington. Your co-operation will be appreciated.

THE TROLLEY-BUS STOP

DUNEDIN: The first trolleybus is being assembled in Wellington, and work is progressing in the preparation for the first conversion. However, it will not be for several months that the route will open.

HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

SYDNEY - NEWCASTLE ELECTRIFICATION
To Follow Western Line

Electrification of the Main Northern Line between Hornsby and Newcastle (84 miles of double track) has been approved and will follow the completion of similar work on the Western line to Lithgow now in progress. This was announced by the Commissioner for Railways, Mr. F. C. Garside.

A feature of the Northern electrification is expected to be the operation of suburban-type multiple-unit cars as far Gosford (50 miles from Sydney). Use of these wide (10 ft. 6 in.) cars will require widening of six of the eight tunnels encountered on the mountainous stretch between Cowan and Woy Woy. This area provides a particularly heavy holiday traffic.

NEWCASTLE ELECTRIFICATION

In answer to persistent agitation from the Newcastle City Council and district organisations for the electrification of the Newcastle suburban lines, the Department of Railways has taken a traffic tally which shows that a daily average of only 14,600 passenger journeys are made on the Newcastle suburban lines, 2700 on the Cessnock line beyond Maitland, 6200 on the Maitland-Newcastle section, and 5700 on the Toronto-Newcastle section, including the Belmont line. Even were the traffic density to warrant early electrification, the Department would be unable to undertake any such work before completion of the Western main line electrification to Lithgow (at present in course) and Northern line electrification to Newcastle which, when completed, may cause the project to be re-examined. A complication would immediately arise with suburban electrification in the Newcastle district, since two of the lines — Adamstown - Belmont and East Greta Junction - Cessnock—are owned by private companies, which would be unlikely to agree to contribute towards the cost. A possible solution would be for the Government to buy the two lines, which would prove a costly proposition not likely to add to the economic justification of any suburban electrification.

Tenders for electric locomotives for the Western line closed on 1st March last.

EARLY SYDNEY "SPARKS"

Among the few oddities of the suburban electric railways of Sydney, N.S.W., two experimental cars stand out. Both were ex-steam "American" type, subur-

THE AUSTRALIAN
ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone: LF 1665)

If outside Victoria, communicate with the nearest representative:

ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND: Mr. G. C. Stewart, 74 Fowlds Ave., Sandringham, W.2
BALLARAT: Mr. W. Jack, 31 York St., Ballarat East, Vic.
BRISBANE: Mr. F. A. Andrews, 35 Stephens St., Morningside, Q'ld.
CHRISTCHURCH: Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON: Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON: Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.

ban cars. End platforms were removed and three doors cut in the side, s milarly to the present wooden T class, but the cars were not widened. Car ends were left flush. One car is still in service as an instruction car; the other has returned to steam service. It is coded FA, despite the complete change in appearance and seating arrangements from standard FA cars.

GOULBURN "TRAM" WAS RAIL CAR

Referring to our note on trams at Goulburn, N.S.W., Mr. Harding, a former district superintendent of the New South Wales Railways, writes: "Mr. J. D. Reid, then District Supt., Goulburn, arranged for the departmental Rail Car (petrol) to run on a specially-laid track in Market Street, Goulburn, alongside the park from Auburn Street to Sloane Street. Only a novelty for the celebrations. . . . Incidentally, the car did great business. The car was used by the District Supt. when making inspections of stations in the Goulburn District."

(Further details of this interesting arrangement will be welcome.—Ed.)

TRAM RUNS CRABWISE

A novel method of moving a tramcar was used by the Detroit, Mich., authorities, when they placed a new PCC car on exhibition recently. The car ran in the usual way to a point directly opposite the exhibit site; it was then jacked up and the trucks swung through 90 degrees. Using wandering leads, the car was then driven sideways on wooden baulks laid at right angles to the track. On reaching the site, it was again jacked up, and the trucks returned to the normal position.

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OBITUARY

MR. ALFRED RAVENSCROFTE

It is with the deepest regret that we report the death of Mr. Alfred Ravenscrofte, supervising motorman, Victorian Railways. An A.E.T.A. member, Mr. Ravenscrofte's tramway career began at the age of 19, when he became a conductor on the newly-opened St. Kilda-Brighton line in May, 1907. During the chaos succeeding the disastrous fire in 1907, he served for a few months as a porter on the steam railways. Returning to the tramway, he was elected in 1911 as secretary to the first Union for the tramway employees. Later he graduated to the job of motorman, and in the middle 'thirties succeeded to the office of Supervising Motorman, which entailed training of drivers, ticket examination, and traffic supervision. He was of great assistance to historically-minded members of the A.E.T.A., imparting freely many details of early tramway operation.

Mr. Ravenscrofte is succeeded as Supervising Motorman by Mr. A. H. Malcolm. Mr. Malcolm joined the tramway service in 1908.

Better Deal For Traction Enthusiasts

Commencing with our next issue, considerably more space will be devoted to electric traction matters. Articles by well-known contributors to "Tram Tracks" will re-appear, and there will be more pictures and track maps, etc. Contributions from readers will once again be welcomed.

About That Sub.

Our financial position would not be so difficult, nor our publication so late, if subscribers paid up promptly when their subscriptions ran out.

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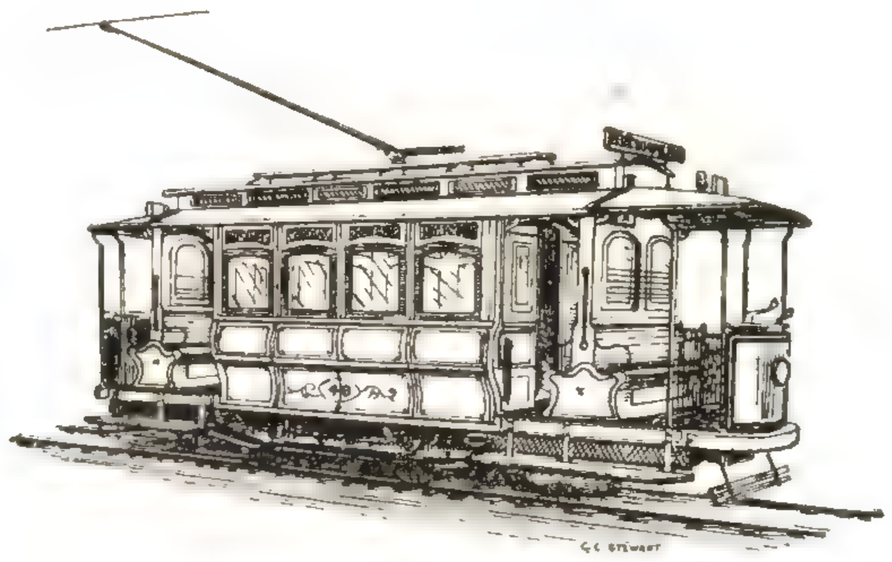

The final part of the article on Auckland Tramways has been held over to enable us to check additional data received.

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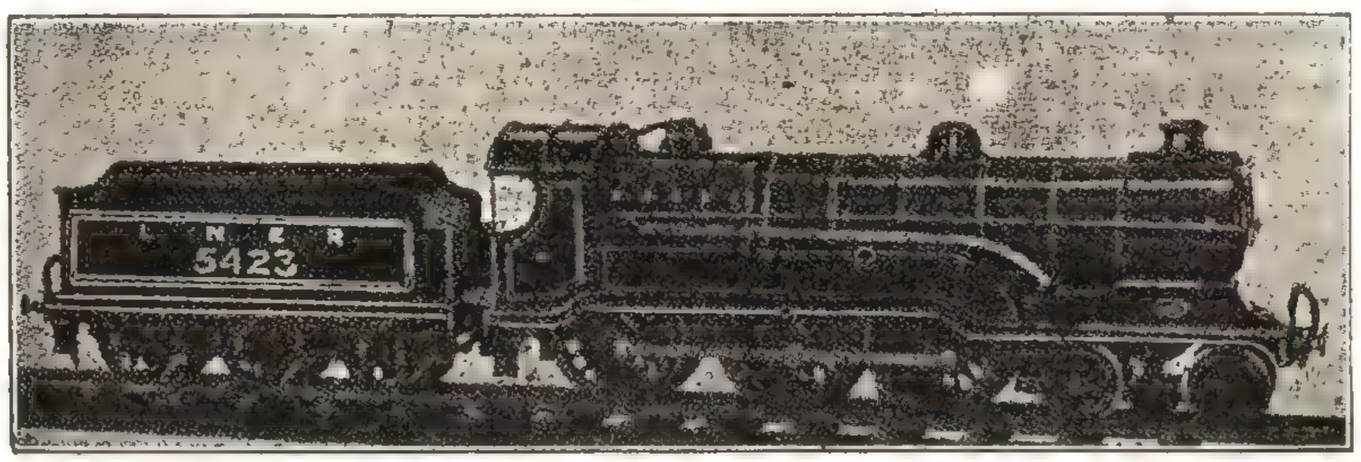

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Model Railroaders!

Here's News

In response to many requests, we are including a Model Railway section commencing with the next issue. Contributions are invited from modellers in any gauge, whether steam or electric.

Previous experience in this field has been discouraging from many viewpoints; but we shall include the section so long as there appears to be a demand for it—in a small way to begin; whether it grows—possibly into a small independent publication—depends on the support received.

Let's have those articles as soon as possible.

A.E.T.A. NOTES

MELBOURNE BRANCH

Recent Meetings

During recent months members have been privileged to hear detailed descriptions of the Perth, Fremantle, Kalgoorlie, Hobart and Launceston tramway systems by speakers who had visited these cities this year.

Coming Events

Further talks on Australian tramway systems will be given at future meetings. Another attraction will be the screening of interesting photos, by means of an episcope, at our July meeting. Don't miss this!
by means of an epidiascope, at our July meeting. Don't miss this!

Brazilian Tramways

Another talk scheduled — probably for August — will cover the tramway systems of Brazil. This has been made possible by the energy and thought of our Uruguayan member, Senor Baird, who has furnished us with complete details and representative photographs of these lines. We cannot express too fully our thanks.

King's Birthday

A hike, similar to the Cranbourne outing, will be held, based on Whittlesea. Take the 9.25 a.m. train from Flinders Street, and bring two meals.

P.C.C. Tour

This long-awaited tour has had to be postponed indefinitely as a result of the prolonged tramway strike.

SYDNEY BRANCH

Meeting Dates

The Sydney Branch has drawn up the following programme for the next few months:—

June 16—Lecture by Mr. H. H. Matthews on "Tramways of Parramatta."
July 21—Tramway Topics.
August 18—Electric Traction Quiz.
September 15—Annual Meeting.

Annual Meeting

All Sydney members are requested to be present at the annual meeting in September, as many important matters will be discussed on this night. The election of office-bearers will also take place.

Brisbane Representative

Mr. F. A. Andrews, 35 Stephens Street, MORNINGSIDE, has been appointed AETA Representative in Brisbane. Mr. Andrews is an electrical engineer and a member of the Light Railway Transport League. Readers interested in forming a Brisbane Branch should get in touch with him.

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Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

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Letters to the Editor

PHOTO CREDITS

The Editor,
Railways in Australia,
Dear Sir,—Recently I was very disappointed to see in R. in A. what I strongly suspect to be an official S.A.R. photograph credited to a contributor as taken by him. Whilst realizing that this kind of "pirating" is difficult to detect, I would suggest that you point out in a future issue that such practices can lead to trouble with the owner of the original negative, as well as being detrimental to the good name of the magazine concerned.

"TATTOO" LOCOMOTIVE

During my recent holidays, while digging through some musty old records, I came across a locomotive described as a "Tattoo type." Never having encountered this expression before, I should be pleased if you would ask through your columns if any other reader would enlighten me as to just what it signified.

Thanking you, and wishing you all the best, I remain, yours, etc.,

A. D. LOCKYER.

Barmera, S.A.

(The erroneous credit was our fault. Mr. David Burke took a number of locomotive pictures during a recent trip to the West, and has most kindly supplied us with printers' blocks which he had made for his own purposes. We rashly assumed that all blocks were from his own prints. Mr. Burke is anxious that this misconception be put right and credit given to the S.A.R.—Ed.)

THE RETURN OF AN OLD FRIEND IS ALWAYS WELCOME
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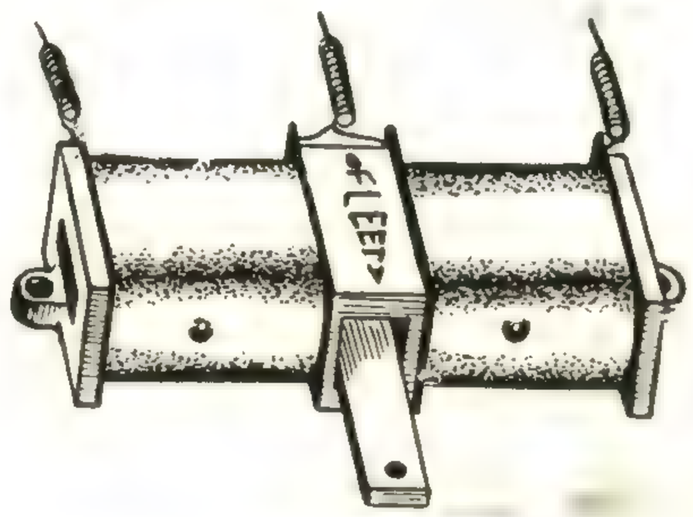

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Fan Mail

Dr. A. W. J. STOCKS, Young, N.S.W.—That's putting it mildly! Extra sub. fixed.

J. J. CUDDY, Arncliffe, N.S.W.—March issue explains situation. See comment this month also. Will be able to use article in near future.

L. G. FARMER, Penguin, Tas.—Using your contribution, probably next issue. I share your feelings re the type of "train" you mention—some seem to have no logical explanation at all.

A. D. LOCKYER, Barmera, S.A.—Using your pic first opportunity.

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

ERRATA

It is our desire to provide as accurate a record as possible of railway matters in this country. Readers who notice errors or omissions in our columns are invited to forward details to the Editor. Where the Bulletin section is involved, write direct to Mr. M. A. Park.

READERS' WANTS

Member of the A.R.L.H.S. and bona fide subscribers to this journal may have small advertisements inserted at the nominal charge of 1/- for five lines. Forward postal notes or stamps (up to 2½d. value) with advertisement to the Managing Editor.

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Railways in Australia

The Magazine about Australian Trains

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Contributions on railway and tramway matters welcomed. Articles, photos., etc., should be forwarded to the Managing Editor.

News items should be addressed as follows :
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ELWOOD, S.3
for tram and terollybus news.

NEW MODEL SECTION
BEGINS ON PAGE 18

FOR ELECTRIC RAILWAY NEWS,
SEE PAGE 14.

VOLUME THREE, No. 5 — MAY, 1950

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OUR COVER PICTURE—
This unusual engine is M.S.A. Class No. 499, a 2-6-0 0-6-2 superheated Garratt on the 3 ft. 6 in. Western Australian Government Railways, photographed by reader Bruce Marshall at Pinjarra on 28/9/49.

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AUSTRALIAN GAUGE UNIFICATION
A Western Australian View

Although the present Commonwealth Government does not appear to regard railway gauge unification and standardisation as favourably as its predecessor, certain parts of the scheme are likely to be carried out in the near future. To many it will come as a surprise that Western Australia, often regarded as isolationist in outlook, should be the first State of the Commonwealth in which this long overdue measure is put into effect. The reasons for this development are given in the accompanying article which appeared in a recent issue of the W.A.G.R. Institute Magazine, and which represents some of the sanest thinking we have yet seen on Australian Rail Standardisation.

The conversion of our railways to 4 ft. 8½ in. seems to be coming again into the limelight. It is understood that the position is now so satisfactory that the Commonwealth appears to be agreeable to meet the major desires of the State in regard to rehabilitation and extent of conversion; and there is every probability of this long-discussed proposition reaching a stage of finality within the next few weeks. It does seem, in fact, that the only clause which now remains to be fixed is a satisfactory formula for the allocation of costs. Having regard to the affluence of the Commonwealth, and the State's acknowledged dependence on her munificence, it seems highly probable that the burden to the State will be mitigated on the easiest possible terms.

One thing seems now to be settled —that unification will eventually be carried out over the entire system, less such lines as will ultimately be abandoned. The decision as to abandonment will probably be the result of agreement between the W.A.G.R. Commission and the Commonwealth Railway Standardisation Division.

With these provisos, unification, modernisation and rehabilitation would proceed as part of one concrete scheme, in something like the following order of priority:

(a) Urgent rehabilitation works the further delay of which would seriously embarrass the W.A.G.R., as agreed between the Commonwealth and us.

(b) Other urgent works not at present indicated, subject to later agreement between the Railway Commission and the Railway Standardisation Division, as the need for such work arises.

(c) Fremantle-Kalgoorlie Section as a separate 4 ft. 8½ in. line until such time as the connection of the standardised adjacent sections is efficiently possible.

(d) Continuous unification until the whole system is completed, subject to the proviso contained in (c) above.

It is understood that, pending the efficient tie-up of branch lines to the main 4 ft. 8½ in. route, the Avon Valley Deviation is to be designed and constructed as a double track, one for 3 ft. 6 in. gauge and one for 4 ft. 8½ in. gauge operation.

It is probable that rehabilitation work will be planned generally with regard to its contribution towards eventual standardisation; and also works which the State expresses a desire to see particularly carried out.

Western Australia, with its somewhat limited perspective, is rather prone to overlook the ultimate and perpetual advantages of unification, and to become obfuscated with the temporary and immediate disadvantages such as transhipment at junctions, and the heavy capital outlay.

Unification, however, opens up a vista of possibilities for a cheaper and more efficient maintenance, for greater expedition of transport, and a considerably larger measure of security in time of war.

After unification of gauges, follows automatically the standardisation of rolling stock, equipment, and components, not only throughout Australia, but also in relation to the British Commonwealth and America. If urgent need arose to transfer railway equipment for war purposes, 4 ft. 8½ in. would be more readily available from overseas than 3 ft. 6 in.

The ordering of 3 ft. 6 in. requirements at present necessitates the issue of special designs and specifications. With 4 ft. 8½ in., however, we will be able to draw on the standards accepted the world over. This applies not only to locos., but also to bridge members, points and crossings, and other components of the way and works. For instance, bridges may be designed to standards of, say, 8 ft., 10 ft. or 20 ft., and, like the famous Bailey Bridge, fitted together to suit a particular location.

The construction of turnouts and sidings it is hoped to bring within appropriate standards, following which it will be possible to enumerate such integrals as points and crossings by Type A, B, etc., and handle the whole unit and place it in position by means of a crane.

Unification, then, is the door that opens to standardisation, revealing endless possibilities of uniformity of design for sidings, truck details, signal equipment, rolling stock, locomotives, all fitted with the golden key of interchangeability.

LOOKING TO THE FUTURE
A Word from the Managing Editor.

The expression being greatly overworked these days, we have not attempted to offer you the "New" Railways in Australia. With this issue, however, we have set out on the path of independence. Since it is on your favour that we depend for success or otherwise, we hope you like the result. Please do not hesitate to write and tell us if you don't, or if there is something you would like to see included.

Finance is an ever-present bugbear, and we can't give you all the pages you would like (and we should like to see you have them) or the pictures, either. Likewise, the presentation may not stand comparison with many more profitable journals. We do what we can—and it has to be done in our spare time, as you know. All kinds of improvements are kept in mind and will be introduced whenever possible.

No doubt the late running disappoints you as much as it worries us. This, too, is basically a financial problem. New subscribers, and lots of them, will help to solve it, so encourage your friends to take out a regular subscription rather than borrow your copy; get your library to place a subscription, too.

We found the editorial going rather heavy this month, with the many new problems, particularly in regard to the model section. This meant having to forego a week which we had planned to pick up on the delayed schedule, but the next issue should be quicker off the mark.

As to content, we hope to provide something to please all of you, except that historical matter will be passed by, this being the province of our contemporary, the A.R.L.H.S. Bulletin. Odd historical matter will inevitably creep in, but our policy is to look to the future rather than to the past.

Many readers have expressed a wish that we resume a positive editorial policy on railway and tramway matters. This issue should not disappoint them, particularly where tramways are concerned. In place of a railway editorial we have included some comments by a Western Australian journal, which express our own views admirably.

What the future may bring we do not know. If it brings you a magazine that you like and that others will like, we shall be content, for that, and not any pecuniary gain, is our aim in publishing Railways in Australia.

WATTLE PARK

FOR THE FINEST SPORTING 9-HOLE GOLF COURSE IN MELBOURNE. TRAM FROM BATMAN AVE. (ROUTE 70)

Opinions expressed by contributors to "Railways in Australia" are not necessarily those of the Editor or of the Publishers.

The first of eight "Deep Sea" trains (so called to distinguish them from the short-haul Newcastle expresses of similar design), the train shown is one of two required to operate the 400-mile "Riverina Express" service between Sydney and Albury on the New South Wales Railways. The loco is No. 3805, the last streamlined 38 class 4-6-2—later engines of this class are unstreamlined. Distinguished by the code letters RUB, these sets are fully air-conditioned and comprise two 1st-class cars (SBS), three 2nd-class cars (SFS), a 2nd-class car with accommodation for hostess and train staff (OFS), a buffet-diner (RS), and a power-brake van (PHS), measuring 546 feet overall, and weighing 348 tons. 98 1st-class and 212 2nd-class passengers are carried. The sets are used on daylight express services to principal country centres. (Courtesy Victorian Railways.)

WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

W.A.G.R. PLANS LOCO. STANDARDISATION

Talks with Manufacturers

THREE STANDARD TYPES ENVISAGED

Upon his return from the United Kingdom last May, the Assistant Commissioner for the Western Australian Government Railways, Mr. C. W. Clarke, gave details of discussions which took place between leading British locomotive builders and himself.

With such builders as Beyer Peacock, North British and Vulcan Foundry represented in the discussions by the Locomotive Manufacturers' Association, a proposal that future locomotive construction for the W.A.G.R. should be limited to three types, each highly standardised within itself, and using parts common to the three types, was given close examination. The aim of this proposal was that the majority of the existing 43 classes could be disposed of and, by retaining only the more modern locomotives, a fleet comprising not more than six basic types would be obtained, the ultimate plan being to have only three standard designs.

The operating requirements and physical limitations of the W.A.G.R. were considered, and from these factors certain design criteria were evolved. These were:

(a) The use of boosters was considered undesirable and to be avoided if at all possible. It was considered that the provision of a higher tractive effort was preferable, even though it reduced the factor of adhesion and hence increased the slipping on starting.

(b) With the higher tractive effort, higher speeds could be maintained on grades and to ensure this, the boilers would be as large and free-steaming as weight limitations would allow. Due to the use of local Collie coal, wide fireboxes and trailing trucks would be required on conventional-type locomotives.

(c) Even though the grate areas were considered small by accepted practice, stokers would be provided to ensure that high rates of firing could be maintained over long periods, thus giving the maximum boiler horsepower. The use of stokers would eliminate the need for coal-pushers or "shovelling forward."

Using the foregoing information, the Locomotive Manufacturers' Association undertook to evolve three designs which would collectively fulfill all W.A.G.R. mainline traffic requirements, the designs being prepared without obligation to the railway.

Brief specifications of the engines are:

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(i) VF class 2-8-2 for freight service; tractive effort 35,000 lb.; maximum axle load 14 tons.

(ii) VP class 4-6-2 for passenger service; tractive effort 26,500 lb; maximum axle load, 14½ tons.

(iii) VG class 2-8-2 plus 2-8-2 for heavy freight service; tractive effort 54,000 lb.; maximum axle load 14 tons.

(All tractive efforts calculated on 85 per cent. of boiler pressure.)

The VF and VP classes will have common tenders, boilers, cylinders, and as many other parts as possible interchangeable, whilst the two freight types will have identical wheels, pony trucks, cylinders and valve gear. It will be noted that the 14-ton axle loading will limit these machines to main lines, the lighter lines being handled by existing types and the new W class 4-8-2's, of which 40 are on order.

As this scheme is intimately related with the standardisation of gauges throughout Australia, provision has been made to convert these designs to similar but larger machines of 17-ton axle load, embodying all the foregoing decisions on interchangeability.

Pending a decision on gauge standardisation (Western Australian lines are built to the 3 ft. 6 in. gauge), the final outcome of this most progressive locomotive plan is in abeyance.

(Acknowledgment is made to the W.A.G.R. Institute Magazine for much of the foregoing information.)

NEW RAIL LINK PROPOSED
Gippsland Port Connection

The Victorian State Development Committee has forwarded to the State Government a request that the economic potentialities of a railway to connect the Gippsland and South Gippsland lines be investigated. The originator of this suggestion, Mr. Buckingham (Country Party member for Wonthaggi) outlined the route of the railway between Morwell and Port Welshpool, to give alternative seaboard port facilities to the rapidly expanding Gippsland area.

The Premier, Mr. Hollway, said that many years ago a similar line, then to run between Traralgon and Won Wron, was urged, but could not be justified. However, owing to the increased development of Gippsland in recent years, the suggestion has been forwarded to the Minister for Transport, Mr. Guye, for report.

MORE DELAYED NEWS

A further batch of news items crowded out of earlier issues, but still of interest, is given below:

Victorian Notes:

From January 1, 1950, the Transportation Branch and Traffic Branch have been renamed Traffic Branch and Commercial Branch, respectively, headed by the Chief Traffic Manager (formerly General Superintendent of Transportation) and Chief Commercial Manager (ex General Passenger and Freight Agent) respectively, as recommended in the Elliot report.

New platform indicator cabins are being built at Flinders Street which will eventually control new type station indicators on platforms and at station entrances.

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Local Firm Gets N.S.W.R. Contract
1600 40-TON HOPPER CARS

The contract for 1,600 bogie coal hopper cars of 40-ton capacity has been let to the Newcastle firm of A. Goninan and Co. Ltd. When tenders closed last September, this firm's price of £3 million was successful in competing with quotes from rolling stock manufacturers in Great Britain, the Continent, and Japan.

As prompt delivery is a requirement of the contract, Goninan's has a working arrangement with the Metropolitan Cammell Carriage and Wagon Co. Ltd., of Birmingham, England, whereby that firm will supply certain components for the first batch of 400 cars whilst Goninan's is preparing the plant for local manufacture of the entire vehicle.

First deliveries are not expected before July, 1951, as much tooling-up will be required; the entire order will take six years to complete. During this time, about 23,000 tons of locally-produced steel will be absorbed by the contract, and the firm's present staff of 700 will be augmented by a further 200.

Current Orders

At present, Goninan's is approaching completion of orders from NSWR for 1,500 wagon underframes, 600 [illegible] ton coal hoppers, and 250 40-ton bo[illegible] flat cars.

A new private siding to serve Wangaratta Flour Milling Co.'s new mill is to be provided in the vicinity of Alumatta and a new siding to serve a mill silo at Geelong is under construction. The new bridge over Joyce's Creek (Castlemaine-Maryborough line) on the deviation to be built to avoid Cairn Curran Dam (now under construction) will have sixteen steel spans with a reinforced concrete deck. (All Victorian Railway bridges have ballasted decks.—Ed.) Fourteen spans will be 60 ft. 3 in. and two will be of 30 ft. carried on reinforced concrete piers founded on reinforced concrete piles. Maximum height above the creek bed will be 45 ft. The Railways Construction Branch will build the new bridge.

Queensland Notes:

During 1949 a stopping place at mileage 7 m. 64 ch. on the Pinkenba line (Brisbane suburban district) was opened for traffic and is now named Bunour. The following sidings have been closed for traffic and the points spiked over: Malchi, Marrawing, Milyando, Mt. Miller, Pink Lily, Pukatika, Cutella, Koolboo, Tilgonda (removed), Womina, Sladevale and Minka.

NEWS EDITOR

With this issue, we welcome to our pages as News Editor Mr. D. C. Wishart. Mr. Wishart is a true railway enthusiast, and has helped us in the past in many ways. Following the departure overseas of Mr. John Buckland, he accepted this arduous task which, like all other editorial and publishing duties, is quite honorary, and carried out in his spare time.

Mr. Wishart has no "magic" source of news, and readers are asked to help by forwarding any news items of railway interest.

Do please remember that what may seem commonplace to you is news to readers in other States and other countries ("Railways in Australia" now circulates in over twenty countries).

News items should be addressed to The Railway News Editor, 29 Seymour Grove, Brighton Beach, S.5, Vic.

PERSONAL

NEW MIDLAND RLY. MANAGER
Mr. Brisbane Retires.

The Manager of the Midland Railway Co. of Western Australia, Mr. D. W. Brisbane, has retired. His successor is Mr. John Dawson, M.B.E., A.M.I.C.E.

Mr. Dawson was born and educated in Western Australia, leaving the State in 1930 to take a position as an engineer with the Great Indian Peninsular Railway. Whilst in India, he gained extensive railway experience and, immediately prior to leaving for Australia in 1947, he held the position of Executive Engineer-in-charge (Survey and Development).

OBITUARY

Mr. C. W. J. Coleman.

We record with regret the passing, on 24th May last, of Mr. C. W. J. Coleman, former Comptroller of Accounts in the Victorian Railways, at the age of 82. Mr. Coleman visited the United States during 1921, and was responsible for the introduction to the V.R. of many reforms, which were copied widely on other systems.

KNOW IT?

While the older Victorian readers would have little difficulty in recognising the subject of our "Know It?" picture on page 3 of last month's "Railways in Australia," others may have failed to recognise the X class 2-8-2 of the Victorian Railways in its original state. No. 27, which was the first of the class, has long since been modified along with others of the class, a stove-pipe chimney and smoke deflectors being the most obvious changes.

ARLHS MEMBERS

In view of the late publication date of this issue, the special offer to ARLHS members of subscriptions to this journal at the rate of 12/6 for one year will be extended to 31st July.

ABOUT ENGINES —

NEW V.R. ENGINES

Newport Shops

Under construction at Newport Workshops is the first post-war locomotive to be built by the Victorian Railways. No. 430, the first of an order of twenty N class (light 2-8-2). It is expected that this locomotive will be ready for traffic in July.

Imported Locos.

As anticipated in our April issue, the local representatives of the North British Locomotive Company, Messrs. Knox, Schlapp Pty. Ltd., of Melbourne, have in hand the erection of an unloading gantry at Williamstown for handling the locomotives being imported from the British works for the Victorian Railways. These engines will come to this country in the ships of the Blue Funnel Line.

QUEENSLAND RAILWAYS

The following B18¼ Pacifics have been painted in the new Hawthorn green and carmine livery: 30, 50, 229, 231, 829, 843, 849, 874, 877-9, 883, 893, 911 and 915.

Two new C17 class 4-8-0 dual service engines were received from the Clyde Engineering Company, N.S.W., and went into traffic during March, 1950.

VICTORIAN RAILWAYS

The V.R. Commissioners have announced that the second set of STUG pulverised brown coal firing equipment at present in store at Newport Workshops will be installed in an N class (light 2-8-2) locomotive at an early date.

The other loco. fitted with this equipment—X class (heavy 2-8-2) No. 32—was used in passenger service between Melbourne and Seymour during the Easter holiday traffic, after a lengthy stay in Newport Workshops having a cracked cylinder replaced. No. 32 has now been allotted to the Gippsland line for running through coal trains, thus reducing the haulage of the special fuel required from Yallourn.

SULZER DIESELS

John Carruthers & Co. Pty. Ltd., of Sydney, N.S.W., have been appointed by Sulzer Bros. (London) Ltd. to represent that firm's diesel traction equipment throughout Australia. The diesel engines supplied will be those manufactured for Sulzer by Vickers-Armstrong Ltd. at that firm's Barrow works.

V.R. DIESEL SHOPS

To service diesel-electric locomotives, a diesel repair shop may be established on a site adjacent to Dynon Sidings (South Kensington) to service and repair all diesel locomotives (ten shunting units at present on order).

QUEENSLAND SCRAPPINGS

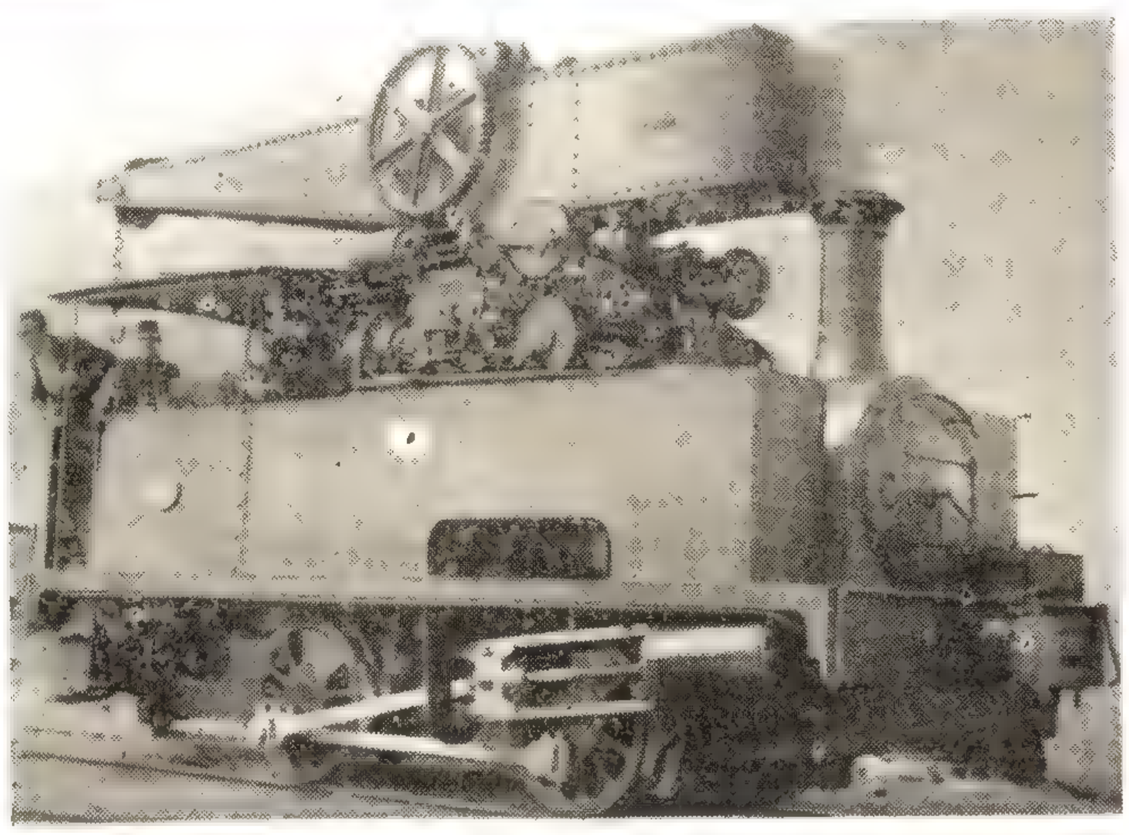
Two more B15C 4-6-0 locomotives (Nos. 206 and 211) were scrapped in November, 1949. Originally built as B15 class by Nasmyth, Wilson & Co., they bore builders' serial numbers 355 and 360 respectively.

TASMANIAN DIESEL SHUNTERS

Brief particulars of the V class six-coupled diesel-mechanical shunting locomotives supplied last year by Vulcan Foundry (England) and illustrated in the October, 1949, issue of "Railways in Australia," are published by courtesy of the Chief Mechanical Engineer (Mr. G. J. Hastie).

The prime mover is a Gardiner 8L3, 204 b.h.p. diesel engine driving through a fluid coupling and epicyclic gearbox. The final drive is by jackshaft and side rods to the coupled wheels, which are 39 in. diameter. Total weight roadworthy is approximately 25.2 tons and the maximum axle load is 8.4 tons. In low gear the maximum tractive effort at 3.95 m.p.h. is 14,500 lb. and at the maximum speed of 30 m.p.h. (in high gear) this figure is 1,920 lb. There are three intermediate gear ratios; giving five speeds in either direction. Length over buffers is 25 ft. 1½ in. and maximum height (over cab) 11 ft. 10½ in. The total wheelbase is 9 ft. equally spaced. These locomotives are equipped with electric lighting and an enclosed type of cab. They are engaged in shunting service at Hobart and Launceston.

Engine Pictures



PM class 4-6-2 of the Western Australian Railways, No. 705. The first of these new machines entered service early this year. With a total weight of 109 tons and a boiler pressure of 175 lb. per sq. in., they have a tractive effort of 25,840 lb.; the two cylinders measure 19 in. x 26 in.; adhesive weight is 42 tons. Other details are: grate area—35 sq. ft., coal—8 tons, water—4,000 gallons, rigid wheelbase—10 ft., coupled wheel diam.—4ft. 6in., length over buffers—62ft. 6⅜in., heating surfaces (total) 1,869 sq. ft. (Courtesy Victorian Railways.)

In contrast to the "Big Power" usually illustrated, the lower picture shows a diminutive crane engine, No. 1 (service stock is numbered separately), one of two operated by Commonwealth Railways. Built by Hudswell Clarke & Co. Ltd., of England, in 1913, as No. 1025, little No. 1 is now to be seen at the Port Augusta, S.A., shops. Driver J. W. Ridgeway is justifiably proud of her dazzling brasswork and spotless paint. Reader A. D. Lockyer, of Barmera, S.A., was behind the camera.

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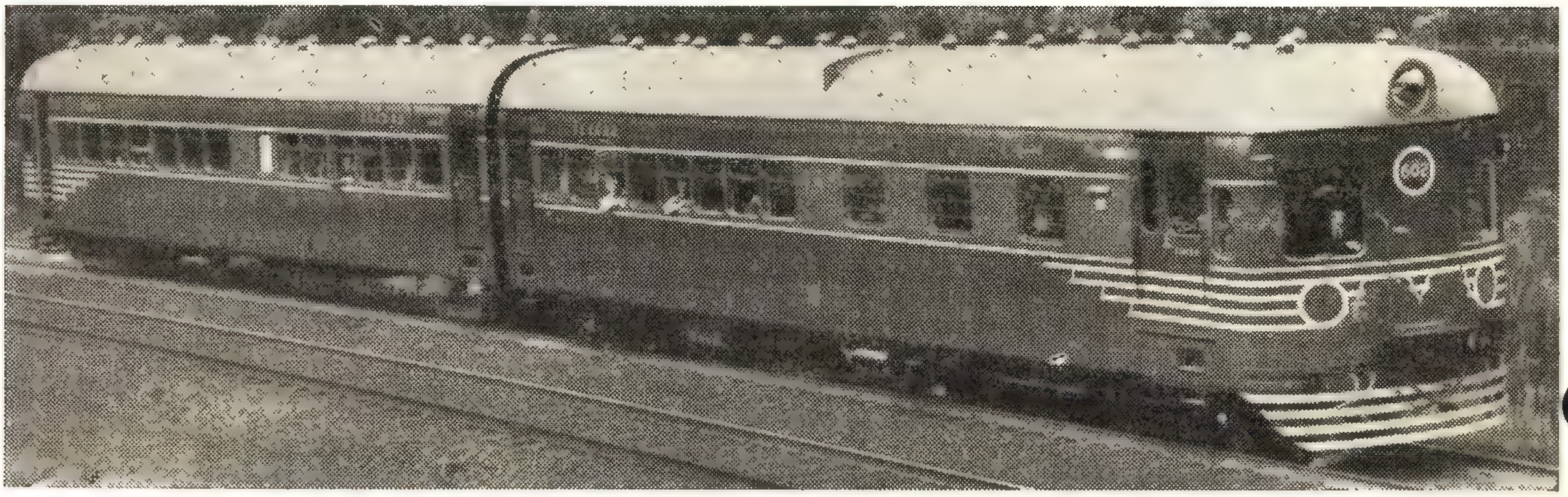
Rolling Stock Parade



NEW RAILCARS

Of impressive appearance, Diesel Railcars Nos. 602 (motor) and 702 (trailer) of the New South Wales Railways are typical of the growing fleet of modern, speedy trains for branchline service. Eight of these 330 h.p. 2-car sets are now in service, with others on order. (Courtesy Victorian Railways.)

Latest addition to the railcar stock of the Victorian Railways is No. 80, first of a series of 250 h.p. articulated 2-car units. The small section between the two cars houses the motors and is mounted on the power truck; this method reduces vibration considerably in the passenger sections. (Victorian Railways' photo.)

The M class box car of 30-ton capacity shown here is typical of the American-type rolling stock introduced on the South Australian Railways under the administration of the late Mr. Webb. The car is not a "private-owner" vehicle; the S.A.R. sells advertising space on its freight cars! (Courtesy Outdoor Advertising News.)

The Railways of Tasmania

A BRIEF OUTLINE

By "Overlander"

(Continued.)

From Regatta Point, the Mount Lyell Mining and Railway Company's line runs to Queenstown—the "capital of the West Coast"—21½ miles. This line, which was opened throughout in November, 1899, includes one of the only two sections of railway in Australia to be worked on the rack principle with special Abt system locomotives. From Queenstown, too, once radiated a network of 2 ft. gauge lines operated by the Mt. Lyell Co., but these have almost all ceased to operate since 1939. Although these West Coast lines are operated by three separate administrations, all are of 3 ft. 6 in. gauge and the rolling stock is, therefore, interchangeable. Burnie station and yards are owned and manned by the E.B.R. and the Zeehan station and yard by the T.G.R., and Regatta Point station and yard by the Mt. Lyell Co., and the working of "foreign" rolling stock is arranged on a reciprocal basis.

Because of the semi-alpine nature of the island, heavy grades and sharp curves abound; the ruling grade being 1 in 40 and the sharpest curves, which are numerous throughout the system, are of 5 ch. radius. These conditions, of course, impose severe restrictions on loads and speeds of trains. Nevertheless, locomotives of 103 tons weight haul loads up to 260 tons on the main line; the journey from Hobart to Launceston taking just over five hours, including numerous stops. The average speed of just under 30 m.p.h., after allowing for many miles of line over which a maximum speed of only 20 m.p.h. is permissible, must be regarded in its true light as most creditable. The maximum speed allowed on any part of the system is officially 45 m.p.h. For many years Tasmanian Railways held the reputation for the fastest trains in the Southern Hemisphere for 3 ft. 6 in. gauge.

Owing to the rugged nature of the country, the cost of construction and maintenance of railway tracks is high. In addition, the island has good roads and numerous ports, the latter particularly on the North-West Coast line, and, as the population is confined mainly to the coastal areas, with direct supply and shipping facilities to and from the mainland, the railways are used principally for short hauls, from which little profit accrues for the handling involved. There are, incidentally, more ports and harbours in Tasmania, the smallest State, than there are in New South Wales and Victoria together. Combined with the fact that the grades and curves often prevent the operation of profitable train loads, making the cost of railway transport relatively high, the competition from sea and road transport has always been an acute problem. In order to regulate and control competitive road transport and coordinate the State's transport system, the Government, under the leadership of the late Hon. A. G. Ogilvie, K.C., in 1933, passed a bill through the State Parliament constituting a Transport Commission with plenary powers for control of rail and road transport. This became operative from July 1, 1939, prior to which the Commissioner for Railways was dependent entirely on the Government of the day for finance over and above revenue necessary for the operation and maintenance of the railways. In this connection it is significant (and depressing) to note that from the inception of the T.G.R. in October, 1873, until the inauguration of the present Transport Commission in 1939, **provision for depreciation of railway assets had only been made during seven years.** This neglect quite naturally gradually brought about conditions that rendered it impossible for the various Railways Commissioners to make any real improvements to equipment and facilities, and, in fact, the position became so serious in the last 15 years that the Government was compelled to make financial provision for additions and maintenance of rolling stock to enable the railway system to give satisfactory service. At the same time successive Governments at this period became committed to increased expenditure because of the unfortunate and short-sighted policy of previously having not provided adequately for maintenance and renewals.

During the past decade, however, a policy of modernisation of the Department's equipment has been actively pursued, and many improvements made to rolling stock and locomotives, which have been constructed to conform to the most recent developments for railway passenger and freight services. Numbers of self-contained power units, some of them Sentinel Cammell steam rail cars, either oil or coal-fired, and, more recently, Gardner diesel-engined multiple-unit railcars of the most modern type, have been introduced for passenger services. Recently the Department accepted delivery of its first diesel-mechanical shunting locomotives and larger diesel-electric locomotives for road service are already on order. Features of these modern steel passenger cars are the large window areas for maximum observation and chrome-plated tubular framed upholstered seats, harmonising with the general colour scheme of the cars, which are arranged on the centre-aisle saloon principle, with enclosed weatherproof intercommunication vestibules between cars. Diesel railcar units are controlled by electro-pneumatic master controllers, enabling one, or more units, or single cars to be operated from driving positions at either end. They are thus eminently suited to main line, suburban, or branch line passenger services.

A further development has been the purchase of a number of all-steel main line saloon cars 60 ft. long. These, too, have extra large windows, with tubular framed chromium-plated individual chairs, which may be moved at will, and in which convenient tables are available for refreshments, which are served from the buffet compartment. Common features of these cars, which operate the Hobart-Launceston service, and the railcar units, are the wall and roof opalescent lighting fittings.

Punctuality of train services in Tasmania is generally exemplary, despite the operational difficulties arising from the predominantly single line system. The only portion of double line is that from Hobart to Claremont, a distance of 8½ miles. Factors which have militated against punctuality in recent years have been poor coal supplies, and the severe motive power shortage, necessitating retention in service beyond their economic age of quite an appreciable number of locomotives which would otherwise be withdrawn from service. A considerable improvement in train working has resulted from the installation of a system of Train Control by selector telephone, which came into operation in January, 1937. The control office is centrally located at Launceston and the selector telephone circuit reaches 72 stations and depots, extending to Hobart in the south and Wynyard on the north-west coast. There are no subsidiary control offices, but when necessary, Launceston Control can contact any station or siding on the system connected to the general Western Electric telephone network, which covers all lines, including branches. The Control office is manned continuously night and day, and Train Controllers are able simultaneously to regulate the work, crossings, etc., of all trains by use of train graphs.

This successful innovation has helped punctuality and considerably increased in volume of traffic handled, particularly in the export rush seasons. It is not exaggerating to say that present business could not have been handled so expeditiously prior to the advent of Train Control. Still another innovation, almost unique in this country, was the introduction of one-class travel, based on a 10 per cent. increase on the second-clas fares from November, 1938. This has improved operations by eliminating the necessity of providing sufficient accommodation of both classes in anticipation of traffic requirements, thus reducing the haulage of unnecessary cars, all of which now have first-class seating. Passenger business has been accelerated and augmented by this democratic change.

Being almost entirely a single-track system, the greater part of the route mileage of the Tasmanian Government Railways is worked by the Train Staff and Ticket system of safeworking, although on both the Main Line and the Western Line there are sections worked by the Electric Staff system, using either large-type or Miniature Staffs. The double line section between Hobart Junction and Claremont is worked with Winter's

(Continued on page 23)

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BOGIE CONTROL DEVICE
Swiss Invention Reduces Flange Wear.

In Switzerland, where not only carriages and wagons, but also electric and diesel-electric locomotives are commonly constructed with a pair of bogies, and where curves in the track are numerous, the control of bogies to promote smooth running and reduce flange wear is of particular importance; and the Swiss Locomotive and Machine Works, Winterhur, have devised a simple coupling to effect this, as well as apparatus for demonstrating the principles involved. A pair of four-wheeled, or six-wheeled, bogies are joined by a spring coupling at the ends of two yokes on the bogies.

The apparatus consists of a horizontal wheel, which may be rotated by hand or by means of an electric motor, and the upper edge of the wheel represents the track. It is, therefore, the circular track which moves, the bogies being held stationary by a cord connecting the front of the leading bogie with any convenient fixture. The "track" consists of two parallel flat paths, with a wide shallow groove between them. There is no superelevation, as the stationary bogies are not affected by centrifugal force, unless this is artificially simulated by a pull on a cord attached to the side of the bogie. Each bogie consists of a rectangular steel block with four wheels or rollers without flanges, and the bogie is constrained to remain on the track by two guiding wheels, one at each end, on the underside of the block, with their axes vertical. These guiding wheels run in the shallow groove of the track, and are smaller in diameter than the width of the groove, to allow some lateral movement of the bogies. They thus resist the lateral forces which are normally absorbed by the wheel flanges, and such forces are readily measured by means of four Huggenberger tensometers, which are fitted one at each end of each bogie. The bogie pivots are connected by a light frame which represents the underframe of the vehicle; and the coupling to control the motion of the bogies is, in this case, a simple arrangement of links without any springs. The behaviour of a bogie, and a pair of bogies, on a curbed track may now be described, by referring to the experimental apparatus, which adequately demonstrates the phenomena.

Considering a single independent bogie: as soon as it is propelled on a curved track (or, as in the apparatus, the track is propelled in relation to it), it assumes a position in which the rear axle tends to be radial to the curve, and the front outside and rear inside wheel flanges exert forces on the outside and inside rails, respectively. In the model, these forces are resisted by the guiding wheels and measured by the tensometers; and, as the model shows, the forces will act without any centrifugal force. It may be shown that the forces increase with the load on the axles, but the speed has no appreciable effect. If, now, an increasing lateral force—a centrifugal force, for example, acts at the centre of the bogie radially outwards, the rear axle will gradually shift over towards the outside rail, and eventually, when the lateral force has reached a certain value, it will cause a flange force to be imparted to the outside rail by the rear outside wheel (or by the guiding wheel, in the case of the model). The value of the lateral force, which is required to cause the rear outside wheel flange to make contact with the rail, may be calculated, and depends on certain characteristics of the bogie and track. Simultaneously, the increasing lateral force adds to the flange force of the front outside wheel, but not to the extent that would be expected by considering the moment of the lateral force on each axle; and the movement of the rear axle to the outside reduces the angle of incidence or "attack" of the front outside wheel flange on the curved rail. The rate of wear of the flange is a function of the angle of incidence and the flange force. The rate of wear of the front outside wheel flange, therefore, will tend to increase with the increase in the lateral force which is applied to the bogie, due to the increasing flange force; but in certain cases the rate of wear of the front outside wheel flanges may decrease due to the effect of the smaller angle of incidence. This behaviour of a bogie subjected to a lateral force while travelling on a curved track, shows that centrifugal force has not as much influence as is generally believed on flange forces and rate of wear.

Consider, again, the motion of a single bogie on a curved track. If a lateral force acting towards the outside of the curve is applied to the bogie (or a rear extension of the bogie) on its longitudinal centre line at a point to the rear of the rear axle, the flange force of the outside front wheel is reduced. As the lateral force is increased the rear wheels tend to move away from the inside rail towards the outside rail, and, when a certain value of the lateral force is reached, the flange of the rear outside wheel rides on the outside rail, similarly to that of the front outside wheel. A further increase of the lateral force reduces the flange force of the front outside wheel to zero, and the front axle is then in a state of unstable equilibrium. This is undesirable because the front axle and wheels may oscillate laterally very violenty between the rails.

Another experiment with a single bogie shows that the natural tendency of a bogie on a curved track to assume the out-of-line position, which has been described already, may be corrected, and the bogie guided entirely, by a lateral force directed towards the inside of the curve and applied forward of the front axle on the longitudinal centre line of the bogie. These two methods of guiding a bogie on a curved track, namely, a lateral outwards force at the rear of the bogie, and a lateral inward force at the front of the bogie are applied to the front and rear bogies, respectively, of a vehicle, by coupling them together so that they mutually correct the tendency of each to assume the out-of-line position. The bogies are coupled by two triangular yokes, one on each bogie, connected together by a spring coupling. The spring coupling allows an initial side-play, which may be adjusted to any value between 20 and 50 mm.; and further relative movement is controlled by two helical springs, which may be adjusted to allow a maximum movement of 24 mm. Relative movement of the yokes may be towards or away from each other, and such a provision is clearly desirable for the occasions when the vehicle is traversing a section of track in which the radius of curvature varies between the bogies. Relative angularity of the two bogies is allowed by the ball joints between the ends of the spring coupling and the two yokes.

At its best, this connecting device will ensure that the two bogies are guided almost wholly by the front pair of wheels of the leading bogie, and, in any case, it reduces the angles of incidence of the wheel flanges on the rail, reduces the flange forces and, consequently, the wear of flanges and rails. In certain cases, however, it is possible for the bogies connected by this device to be unstable on a curved track; but this can be checked when designing the vehicle, and avoided by careful design and suitable adjustment of the spring coupling.

(Adapted from "Engineering.")

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BACK NUMBERS

We can still supply copies of all issues from the second (August, 1948) to that for December, 1949, at 1/- per copy, or 15/- the set of 17 copies (American prices, 15 cents and 2 dollars, respectively), and from February, 1950, to the present at 1/3 per copy (20 cents).

TRAM TRACKS

Back numbers of TRAM TRACKS continue to disappear. We can now supply issues for 11/47, 12/47, 8 issues during 1948, and all from 1/49 to 8/49 (the last issue) at 6d. each.

ELECTRIC TRACTION

TRAMWAY — TROLLEY BUS — ELECTRIC RAIL

Formerly published separately as "Tram Tracks"

Winter fogs have been particularly heavy in Melbourne this year. Tram traffic, however, was noticeably little affected, in contrast to many other forms of transport. Our illustration shows a typical scene at the corner of Collins and Swanston Streets; the Town Hall is barely visible. Weather blinds were in evidence on the two W2 class cars. (Courtesy Melbourne "Age".)

SYDNEY, MELBOURNE and Sundry Errors

A well-known Melbourne daily newspaper, the circulation of which is exceeded only by an editorial readiness to pontificate on any subject under the sun, has long been noted for its opposition to trams, its dislike of the policy adopted by the Tramways Board, and its publication of facts and figures which rarely stand comparison with those published in more official quarters. A more recent effort has been an attempt, in a series of articles, to compare Melbourne's transport with that of Sydney, to the detriment of the former, and the great astonishment of Sydney-ites who have long ceased to fret about such things.

An impressive list of statistics appears, as usual, to lend weight to the articles, but a little close examination soon dispels this impression.

To open his argument, the newspaperman states that the population of Sydney is little greater than that of Melbourne. Although available figures are estimates, there is no quarrel with their accuracy within the limitations of the areas used for statistical purposes. In point of fact, whereas most of Melbourne's population does reside "within ten miles of the G.P.O.," that of Sydney spreads far beyond this limit. It is possible to travel for twenty miles on any of the four principal railway lines out of Sydney without leaving the built-up area, and it would be a bold man who would say positively where Sydney begins and ends, and just what population is served by trains and 'buses in particular.

Basing its arguments on this dubious foundation, the newspaper goes on to compare seating capacities of the trains, trams and 'buses used in the two cities. Here we come to something concrete, but hardly indestructible! Space limitations prevent a full examination of the arguments, so we shall content ourselves with looking at those concerning tramways.

It is stated that 1,440 trams are in service in Sydney. This was the figure eighteen months ago, and it included "46 tramcars stored at Randwick Workshops." (We recall vividly an occasion on which it was proposed to place these cars in service; the absence of such essentials as flooring, doors and electrical gear in varying degree proved quite a hindrance.) Of the 1,394 cars remaining, over 300 were unserviceable, and the number actually in daily use was only 965. Since that time nearly 200 cars have been withdrawn for scrapping, and the actual number in service has decreased. Exact figures are not to hand but, at the most, 1,230 cars were in existence when the articles were published.

In similar fashion, Melbourne's tramcar fleet was given as 733, when in fact it was 753, with a further ten cars awaiting allocation to depots.

When it comes to total seating provided, some really fine juggling is performed by our newspaper friend. We have no quarrel with his figure of 70 for the average seating capacity of a Sydney tram, but with over 200 cars fewer than claimed, the total seating available is reduced by 14,000. The Melbourne figures are, however, a study in inaccuracy. The average is given as 40, whereas it is, in fact, 47.76—a study of official M. and M.T.B. data sheets will convince any doubter. With twenty more cars than claimed, and ten seats more per car, the total seating capacity of Melbourne trams is over 8,000 greater than that stated (it was actually 37,473 when the article was written and is now 37,993).

Such errors scarcely lend credence to other statements in the articles, particularly when the figures could easily have been checked. No doubt they were obtained from obsolete records, but that does not excuse them

As newspaper men cannot really be expected to have a technical knowledge of tramway matters, it is scarcely surprising that the writer of the articles overlooked the fact that the average service speed of Melbourne trams is 2 m.p.h. faster than that obtained in Sydney, that

(Continued on page 11)

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A Perth, W.A., tramcar serves as a mobile hoarding during an intensive Safety First campaign conducted by the National Safety Council. It is not possible to identify the car from the photograph. (Advice from W.A. readers would be welcomed.—Ed.) (Courtesy Outdoor Advertising News.)

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

MELBOURNE—Victoria:—

SW6 class cars completed and awaiting use are Nos. 950-959, whilst bodies and frames from 960-969 are in various stages of completion. All "L" class cars except 101 and 104 have been finally modified, and "face-lifted." The "P.C.C." car (now numbered 980, but still unclassed) had a trial run on the West Preston branch late in May, and is now back being equipped with interior fittings. The Public Works Department is soon to report to the Government on the connection between the isolated Footscray system, and the main system through Maribyrnong—a distance of about ¾ mile. There are still remaining in the ground 13.631m. of abandoned cable tramlines. Much of these will go when the Bourke Street routes and the Port Melbourne line of buses are electrified. With recent additions to its power supply, the total capacity of the M. & M.T.B. system is now 34,110 K.W.

MELBOURNE—V.R. Tramways:—

The annual report for the year ending June, 1949, reports a loss of over £11,000 on the St. Kilda-Brighton line, and a profit of £2,245 on the Black Rock line. Passengers carried, although less than the war-time peak, is still far above pre-war figures. There is no indication yet as to the nature of the proposed Transport Co-Ordination Bill of the Government. It is understood that the authority set up by this measure will decide the future of these two lines.

SYDNEY—N.S.W.:—

The Ryde line, closed some months ago, to Drummoyne, has been re-opened to the Gladesville swing-bridge, about a mile. The service was reinstated on 28/5/50. On the same day, the Watson's Bay line was re-opened to the terminus from Dover Road. It was previously stated that it would re-open on 19/4/50. Four junctions and six crossovers have been converted to "unbroken main-line" operation by closing the groove. Diverging road cars consequently run on a ramp over the closed groove. During the hours of darkness, all cars will now carry an oil tail-light. These are stored in the depots during the day. Mr. R. Winsor has been appointed Director of Transport and Highways, and his former assistant, Mr. A. A. Shoebridge has been appointed Commissioner for Road Transport and Tramways in his place. A number of "R" class cars has been transferred from North Sydney to the main system, and some "O" cars from the 800 and 900 series have been sent in return. No numbers are yet available. "K" class cars 1289, 1302, 1320 and 1321 have been sent from North Sydney to Randwick for storage. Only two remain (Nos. 1295-6) for the Neutral Bay branch working. 499-500 "E" class and 529-530 are to remain at North Sydney, while 521-26, have been taken to Randwick.

NEWCASTLE—N.S.W.:—

We regrefully announce that the last tram in Newcastle ran to Waratah on the 10th June, 1950. Newcastle's first tram started in 1887. The Racecourse route was closed on 10/4/50, and the Glebe and Merewether services closed on the 25th February, not March, as previously stated. The sole remaining service — City to Waratah (6 miles) — was opened as a steam tramway from Moira Rd. Junction to Waratah (2¼ m.) on 20/1/1915. It was electrified on 6/4/1925. The tramway depot at Hamilton will be used as the Bus Workshops, and the remaining L/P trams will be locally scrapped or sold. Much municipal opposition has been made manifest as the remaining tramways have been closed. The total loss on operation for the Government tram and bus services for the year ending June, 1949, is £390,513.

ADELAIDE—South Australia:—

The Adelaide City Council have appointed a special committee to confer with the M.T.T. in an attempt to have the City Depot moved from Angas Street. It is claimed that the movement of trams in and out of the shed interferes with road traffic. The Depot was opened in 1922, and ever since the Council have been trying to have it removed. The numbering of tram stops (as has been done for many years on the trolleybus routes) is being done. The Trust has decided against the introduction of late-night trams and Sunday morning services.

BRISBANE—Queensland:—

The date of opening of the last two tramway extensions are as follows; Belmont extension (77 chains) on 31/7/48, and Enoggera extension (1 mile 22 chains) on 13/8/49. Under construction is the extension of the Holland Park line into a new housing area. Forty-six chains of track have been duplicated at Ashgrove and 34 chains at Newmarket.

WESTERN AUSTRALIAN TRAMWAY NEWS

Perth.

Heavy rain on May 10th caused the derailment of a tram in Angelo Street, South Perth. The tram was off the rails for about three hours, and a bus was used to handle the traffic. The accident occurred on the downhill stretch between King-Edward Street and Coode Street, where several derailments have occurred in recent years. The track, which runs along the west side of the road on open ballast is in poor condition. Motorman J. Horner stopped the tram within a few feet.

Trolley bus traffic was dislocated between Perth and Claremont for about an hour, from 6 p.m. on April 18th, 1950, when a trolley bus power pole ran off the overhead wires and tore them down near Wingfield Ave., Crawley. Trolley buses banked up the scene until current was switched on through the disused tramway overhead line. They then used this line to by-pass the section. The tramway track and overhead wire, although not used now, remain in usable condition from Perth to Crawley Baths. This single line tram route once extended as far as Claremont railway station, but in 1938 was converted to a trolley bus route.

The April, 1950, W.A.G. Tramway revenue was £44,259 compared with £46,836 in April, 1949. The respective expenditures were £53,603 and £60,401.

Fremantle.

Changes in fares on certain sections of the routes operated by the Fremantle Municipal Tramways Board came into force on May 1st, 1950. Travellers from the city to the outer sections have to pay 1d. more.

(Continued on page 12)

AUSTRALIA'S FIRST P.C.C. CAR has been undergoing trials at Preston Shops and on the road. These pictures, taken by a Melbourne "Age" photographer, show the body, mounted on trestles, receiving last-minute touches prior to being lowered on to the trucks. The lower illustration gives a pitman's-eye-view of a section of the truck.

Actually not a true P.C.C., the car, which is numbered 980 in the M.&M.T.B. fleet, comprises a standard SW6 body, suitably modified, mounted on the latest type of P.C.C. trucks. P.C.C. control equipment is fitted, but controllers, etc., are arranged for hand operation — the standard P.C.C. arrangement is for pedal control and braking; P.C.C. trolley bases are fitted also.

Although to outward appearance a drop-centre design, the car body is actually flush-decked, small additional step wells being provided inside the sliding doors. This arrangement was necessary to allow for under-body equipment.

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the heavily-loaded routes are, in general, shorter, and that lay-over time is less (late running through adverse traffic conditions hampers all street transport in Sydney). All these things mean, of course, that more trams, and hence more seats, are provided past a given point in Melbourne by the same number of trams.

Many of the 'bus figures given are equally erroneous but are scarcely within our province.

As a final note, however, we cannot overlook the illustrations which headed the first article. A P-class car was shown before and after conversion to the PR1 design. After describing the car as the "most modern in Australia" (it is not even the most modern in Sydney!), the caption went on to explain that this was one of the ways in which more seats were being provided for Sydney tram travellers. As the conversion involved the reduction of the number of seats from 80 to 52, we remain unconvinced.

(We should add that nothing in the foregoing comments is intended to detract from the really admirable efforts now being made in Sydney to bring the tramway and omnibus services of that city to a state of modern efficiency. Perversion of facts and figures is, however, another matter.)

TRAMWAYS OF BROKEN HILL

New South Wales Government Tramways

By J.R.

In addition to its extensive system at Sydney, the New South Wales Government at one time or another constructed steam tramways to various towns and cities throughout the State. Of these, only the lines at Newcastle were electrified, and, with the closing of the last route in the latter city, all have now disappeared. Several single routes built to connect towns with nearby railways have since been "promoted" to full railway status. More extensive were the systems laid down in Maitland (twenty miles from Newcastle and 120 miles from Sydney) and Broken Hill, a mining centre in the desert country 700 miles west of Sydney. Ambitious schemes were prepared for their extension, but failure

to electrify the lines and unchecked 'bus competition led to the closure of the two systems on New Year's Day, 1927.

The first route in Broken Hill was along Argent Street, from Oxide Street to Broken Hill South. The 3 miles 7 chains of single track were extended to North Broken Hill (1 mile 45 chains) and Alma (61 chains) on 24/12/02, and to Kaolin Street (69 chains) on 6/5/03. The Kaolin Street line was extended to West Broken Hill (39 chains) on 7/9/07, and on 30/8/09 two further extensions were built to East Broken Hill (75 chains) and the link from West via Burke to Gossan Street (1 mile 33 chains). Later extensions were to Hillside (40 chains) and thence to the Racecourse (35 chains) on 23/12/12 and, finally, the short branch from Argent Street along Iodide Street to the station (11 chains) in 10/19. This brought the total mileage to 10 miles 15 chains.

The East Broken Hill, Hillside and Burke routes were closed during 1926, a few months before the final cessation of operations on 1/1/27.

Rolling Stock and Services

Rolling stock consisted entirely of the standard steam motors (A class) and cars (B class), except in the case of the three motors sent to open the system, which were Baldwin products, with 11 x 16 cylinders. Total stock comprised 11 motors and 31 cars, except for a short period from 1919 to 1920, when there were 13 motors and 34 cars. Peak hour trams had up to three cars and four-car sets are reported to have been used in race traffic. Seven motors and seventeen cars were in use daily, with up to ten motors and 29 cars on race days.

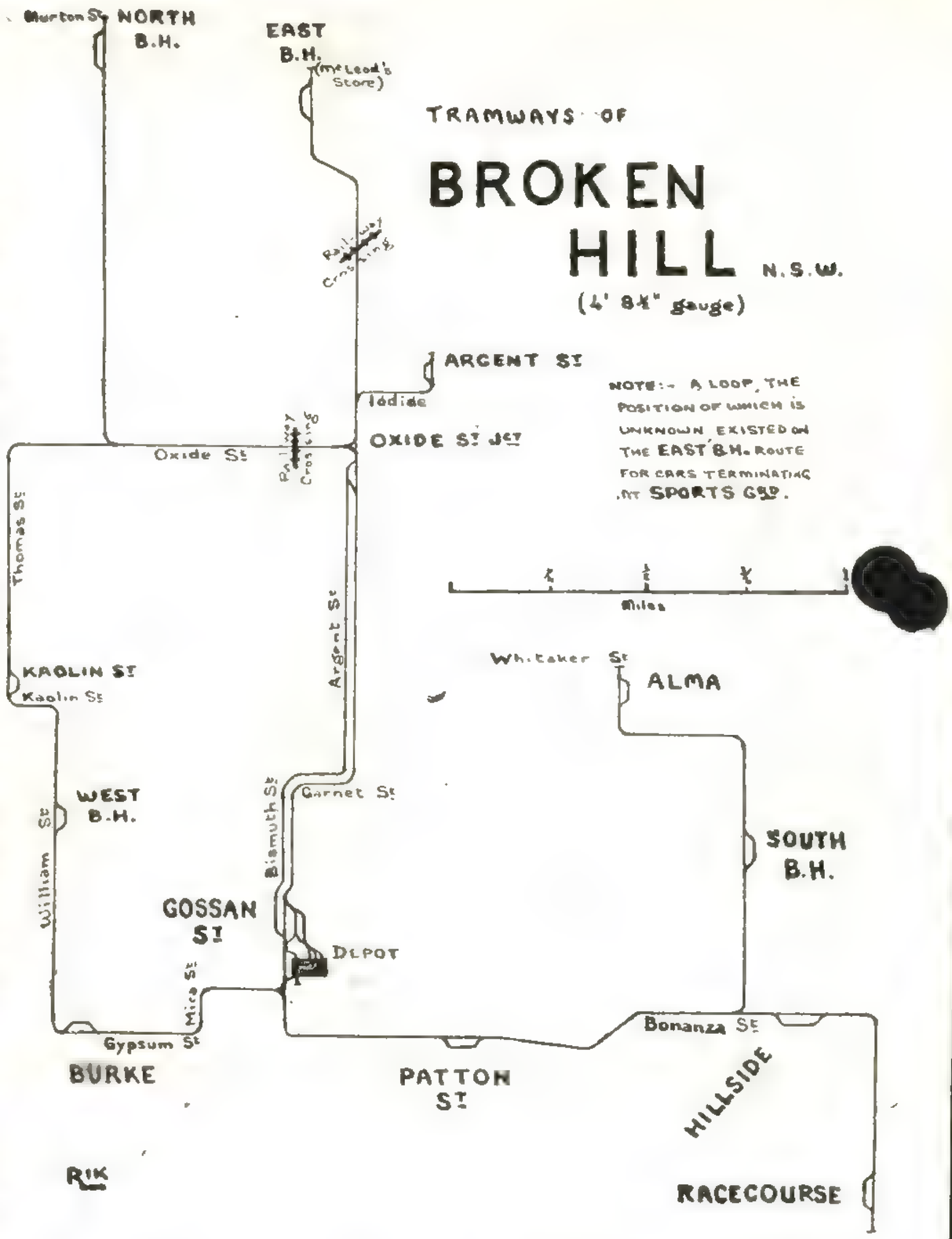
Service was half-hourly on each route, with increased headways over the common sections, cars being through-routed between North and Alma, and between East and Hillside, while the service to West and Burke started from Oxide Street Junction. The line along Iodide Street, cars on which showed the indication "Argent Street," is believed to have had only an intermittent service. There were certain short workings, particularly on the West line, but nothing is known of these by the author.

Coloured destination rolls with symbols exactly as in Sydney were used. It may be possible to publish these in R. in A. in the future. Miniature replicas in full colour are obtainable.

The depot was located in Gossan Street. As originally built, it housed five motors and ten cars. In 1903 this was increased, a further enlargement being made in 1909, from which time the capacity was 15 motors and 35 cars.

Motors employed at one time or another included Nos. 7, 18, 91 (the original batch), 24, 50 (1903), 38 (1907), 28, 70, 86, 89, 93, 99, 106 (1909) and 120 (1920). The last-mentioned was from Newcastle, all others being from Sydney. Nos. 28, 89 and 99 were sent to Sydney in 1920; all those remaining were scrapped in 6/28.

Passenger cars (all 70-seaters) included Nos. 29, 31, 36, 41, 44 and 45 (1902), 58, 62, 75, 105 and 111 (1903), 13, 23, 50, 64, 76, 95, 96, 109, 128, 153, 160, 175, 187, 189, 190 (1909), 48, 52, 65 (1912), 116, 125, 129, 135 (1913). Nos. 135, 160 and 187 were sent to Sydney in 1920; Nos. 48 and 116 were sold and the remainder scrapped.



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As there was then no direct rail link with Sydney, all rolling stock was transferred by sea to Adelaide and thence by rail to Terowie, where the break-of-gauge necessitated further transhipment to a second train.

No serious accident appears to have occurred, although a motor and one car were damaged during gravity shunting operations.

The writer's thanks are due to Messrs. C. C. Singleton, Cedric Thomas and Ken Magor for various data used, and for the opportunity to peruse their records.

NEW ZEALAND NOTES

It is understood that buses have taken over on the Fendalton and Opawa routes in Christchurch, but we have not received any dates. The Gardens and Opoho routes in Dunedin are being prepared for the trolley-buses. In Wellington, trackwork has been renewed at the main city terminal in Lambton Quay.

Wanganui to Close.

The Wanganui tramway system is expected to cease operations in July next. Fourteen buses for this city are being built in Auckland.

LATE NEWS

Melbourne.

Ten new SW6 cars—950 to 959—entered traffic in June; some depot allocations are: Kew, 950-2, 956; Hanna Street, 955; Glenhuntly, 953-4, 958.

PCC car No. 980 ran extensive trials. Acceleration and speed said to be "astounding" and 80 per cent. noise elimination reported.

A proposed traffic roundabout at the corner of Flinders Street, Spring Street, and Wellington Parade, involves the use of a short tramway subway.

Sydney.

Part of single track on reinstated Watson's Bay line being duplicated (between Signal Station and Park Loop).

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AN INTERESTING MELBOURNE TRAMWAY LINK

Lygon St.—St. George's Rd.

By "Annett Lock."

Two of the main arterial roads linking Melbourne with the northern suburbs are Lygon Street and St. George's Road. Both run due north, and are a mile apart. In 1916, an electric tramway was built in Lygon Street by the M.B. & C.T.T. as a part of a line linking Brunswick and Coburg with the top end of the City. From 1886 a cable tramway was in operation to North Fitzroy, and terminated in St. George's Road, about three miles north of Melbourne, and did not proceed through to the northern suburbs of Northcote and Preston. But, in 1920, a route planned by the F.N. & P.T.T. was opened by the Tramways Board, running from the cable terminus out to Preston. Passengers from the Preston electric cars were consequently obliged to change cars at North Fitzroy, and continue on in the "cable."

When the M. & M.T.B. took over the municipal tramways in 1920, they set about converting the cable tramways and linking the electric routes. But as the North Fitzroy cable line was not early on the conversion list, another plan had to be sought to bring the Preston electrics to the City, and so avoid the inconvenient changing, an important factor in this case because of railway competition.

Finally, in 1925, the M. & M.T.B. constructed an east-west double track connection from St. George's Road to Lygon Street. Opened on the 24th March, it became the continuation of the Preston route from the terminus. Turning immediately west, it traversed Barkley Street for a few chains, thence south down Pilkington Street for a similar distance, where Holden Street was reached. Here the rails turned west once more and ran direct for 7/8 mile to Lygon Street, where the lines turned south and joined the Coburg-Brunswick line to the City. Trams terminated in Swanston Street, at the Lonsdale Street corner.

On 26/10/1930 the North Fitzroy cable became electric, and the Preston cars thereafter came into the City via Brunswick Street and Collins Street. This was a much quicker run, and consequently the link to Lygon Street became redundant. However, owing to the construction of the tramway workshops at Preston, the link immediately became useful to allow trams from Coburg (and later Brunswick, as well) to work to the workshops and avoid a long trip through the City. In addition, there was a certain amount of local traffic on the link to and from shopping areas in Lygon Street and St. George's Road. It was decided to keep the route open, and to inaugurate a local "shuttle" service on about a 20 minute headway for the mile link. Fare was 2d.

To try out the use of "bow-collectors," two cars that were used on the shuttle, Nos. 209 and 211 ("U" class S.T. Saloons), were so equipped for a period on trial. It was decided, in 1939, to finally withdraw the tram service, and handle the passengers by bus, and to keep the link open for depot and workshop runs. As the double line was now useless, the UP track was removed from 25/10/39, and on the same day a single bus (usually a 20 passenger Leyland deisel) commenced operations. The UP overhead was, however, left in place. Trams using the link in the UP direction were now required to shunt on cross-overs in Lygon Street and St. George's Road to reach the single line.

On 21/7/41, perhaps as a war-time economy measure, the bus was withdrawn, and the local shuttle was restored. But with 209 and 211 on the scrapline, other single-trucks were used. Generally, one of the "G" cars (ex-"R" class) operates the service as a 1-man vehicle. In 1934, when route numbers were introduced, the shuttle became "11," but in 1937, when the Collins Street (City) routes were re-organised, the link became officially numberless. What did it matter? The cars never carried the numbers, anyway! To-day, the service still continues faithfully, and with the electrification of Nicholson Street bus route and extension to East Brunswick, the Holden Street rails will be crossed, and it is understood a connecting curve will be built.

SYDNEY'S FIRST ELECTRICALLY-DRIVEN TRAM

1888 BATTERY CAR

From "Town and Country Journal" (9/6/88)
With Additions by C. R. G. Field.

On the afternoon of Friday, June 1st, 1888, a special steam tram left Bridge Street Yard, Sydney, carrying some 200 invited guests to Botany Bay, to make an inspection of a new mode of car propulsion to which Mr. Pritchard, contractor, had invited them. Among those present were Mr. Dibbs and Mr. Burdekin, Ms.L.A.; Mr. Norman Self, C.E.; Mr. J. M. Smail, C.E.; and several other official and professional gentlemen.

After a preliminary discussion of lunch and other tramway matters in general, an inspection of the electric accumulator car itself followed. It was a four-wheeled, double-deck car, of which the lower deck comprised an enclosed saloon with longitudinal seats facing inwards, and end loading platforms, entrance to the car being at the rear on the left-hand side in each direction. From the end platforms, entrance was given also to the upper deck, which was without any tilt or awning, and which was fitted with throw-back transverse seats on one side of the car, on which four persons could be seated. (As in present-day Lowbridge double-deck buses.—Ed.). As a whole, the car stood rather high, and the centre of gravity might have been lowered with advantage to steady running. Its appearance was neat and not gaudy. Under the longitudinal seats in the saloon were placed the accumulators or storage batteries containing the electromotive power for driving the car. They were on the "Julian" patent system. The lower panel on the side of the car formed hinged doors, which, when let down, allowed of the withdrawal of exhausted accumulators, and the insertion of newly-charged ones. The act of placing the accumulators into the car in specially fitted locations automatically formed electrical connections.

Under the centre of the car was the motor; the axle carrying the revolving armature had a pinion gearing with two pitch chains which ran over two cog wheels, a cog being fitted on to each axle of the car. The current, passing through the motor, set it in motion, and, through the pinion, the chains, and the cog wheels, turned the wheels of the car, thus propelling the car along. On both end platforms, the necessary control gear was fitted for driving the car along, and a horizontal wheel type hand-brake sufficed as braking power. The weight of the car empty was 5½ tons, and, with its 50 seated passengers (26 in the lower saloon and 24 on the top deck), the weight ran up to about nine tons.

The accumulators were electrically charged at a terminal somewhere in the Redfern district by an Elwel-Parker dynamo, which was driven by a stationary steam engine. The weight of a set of accumulators fitted into the tramcar amounted to 2½ tons, and a set comprised eight trays of accumulators, fifteen cells in each tray, and the power stored in all of them was sufficient for a run of six hours. The maximum speed attained on level stretches was 15 m.p.h., and grades of 1 in 10 had been surmounted with a two-thirds load at a rate of from 4 to 5 m.p.h. In practice, it was not deemed advisable to run such a car up a grade steeper than 1 in 15. Incandescent lamps supplied from the accumulators were used in illuminating the car.

Trial Runs.

Several preliminary short to-and-fro runs were made at Botany for the purpose of illustrating the powers of the new tram. The absence of smell, smoke, and noise was conspicuous. The ease of handling was readily apparent, and comparisons, always odious to those in disfavour, were frequent and freely made. Mr. Pritchard and his electrical engineer, Mr. R. Bullimore, were ubiquitous, and full information courteously given.

When several trips had been made and the visitors, with many of the inhabitants of Botany, had gathered together round the car, Mr. Dibbs mounted an empty packing case, which served for an impromptu rostrum, and spoke as to the practical success and future prospects of electric tramcars as made plain by the new system. Mr. Burdekin followed in the same strain, and Mr. Pritchard explained his position with regard to the Australian Electric Tramway Co., at present confined in number to himself and another, Mr. Bullimore, in response to a call, explained the electrical and mechanical construction of the car, and the success gained by the Julian accumulator system in Antwerp, Philadelphia, and Rio de Janeiro. In the last-named place, at this time, electric tramcars on this principle had been adopted, having gone beyond the experimental stage. The speakers were cheered by the assemblage. The party then pro-

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HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

IMPROVEMENTS ON MELBOURNE LINES

New Locos., Stations, Substations Planned
Experimental Passenger Car

Further details are now available regarding the 17 main line electric locomotives now on order for the Victorian Railways from the English Electric Co. Ltd. They are to be ntted with six traction motors of 340 h.p., continuous rating, giving the machine a short-time rating of 2,250 h.p. With an axle load of 16 tons, the locomotives will weigh 96 tons, and will have an overall length of 56 feet. The air brake system is the Westinghouse schedule A-7-EL, with regenerative interlock feature.

New Substations.

As part of plan to improve power supply in the suburban area, six new substations (for which equipment is now on order) are to be constructed. Four of these will be for the Frankston line, between Caulfield and Seaford, whilst the other two will be between Caulfield and Dandenong.

The existing rotary-convertor substation at Springvale is to be demolished to allow increased track facilities and the new line to serve the projected Sandown Park Racecourse. All the substations are to be double rectifier units of 3,000 K.W. capacity, and will be connected with the 50-cycle system.

Experimental Car.

The experimental suburban trailer car now approaching completion at Newport Shops will be numbered 443T, it is expected. Main feature of the design is the partition of the car into three isolated saloons; one —at one end of the car—is to be devoted to smoking. Entrance to each saloon is by large sliding doors, so arranged as to be operating in opposition.

TWO NEW STATIONS

Two new passenger stations are contemplated for the suburban system. One is to be Oak Park, between Pascoe Vale and Glenroy, on the Broadmeadows line. This station was first mooted in 1928, when a plan proposing an island platform between the Up and Down main lines was prepared. However, the economic depression of the following year put a sudden stop to the prevailing land boom, and the station was not built. At present the area is well developed, and, on several occasions, deputations of local residents have requested the provision of a station to serve the area. It is now probable that the station will have separate Up and Down platforms, as island platforms are not looked upon favourably — mainly due to the fact that the driver of an electric train has to leave h cabin to see the guard's signal t start. (V.R. electric trains do not have the continuous electric bell as fitted in Sydney and other systems.)

Factory Helps.

The second station is at 13½ miles on the Dandenong line, between Clayton and Springvale. The justification for this station is industrial, for it will serve a factory now in course of erection for Martin and King, well-known Melbourne bodybuilders. Work on the station has commenced.

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ceeded to the electrical car and to the special steam tram. The former was well loaded with many men of weight and substance, several being well above the weight of the average passenger. The electric tram took the post of honour, leaving Botany first, and the special steam tram followed at a respectful distance.

Public Interest.

On the up-grades, the electric tram was closed upon by the special tram —possibly the driver of the special had been put upon his mettle. On the levels, and around the curves, the accumulator tram drew away again. Much attention was paid to the novelty by the inhabitants, and rushes to doors and windows were common all along the line. Even the stolid Mongolian deigned to stop and gaze at this strange tramcar travelling along without any apparent form of traction either in front or behind the car, such as one was accustomed to in these days (Waterloo, which the route traversed, was at one time the principal centre of Sydney's Chinese population.—Ed.).

The electric car made steady progress along the route, and the steep grade from Belmore Park along Elizabeth Street to Hyde Park was made at a steady rate. The distance from Botany to Market Street was done in ¾ of an hour. It should be noticed that no stoppages to take up and set down passengers were made, as would be the case in ordinary running. The double line "S" curves and steep grade at Hubter Street were successfully negotiated by the electric tram.

The sketch of the tram being tried out on the first instant shows the engineer of the Australian Electrical Tramway Co. (sic), Mr. R. Bullimore, standing at the controls. The cross seats fitted on the top deck of the car were more comfortable than the usual "knifeboard" kind, and the backs, being of the double-throw type, enabled passengers to face either way. The roof was doubled to keep out as much heat as possible from the saloon during the hot summer days, and the general make of the car was very substantial.

Electrical Equipment.

From reports of a car similarly constructed, it would appear that this car was fitted as follows:—

"The motor is a dynamo machine with inductors in circuit, capable of supporting a current of 100 amperes; it is placed under the carriage, and drives the wheels by an intermediate axle and chain. The change of direction in travelling is worked by the aid of a small lever, which commands two pairs of brushes, one for the route in one direction, and the other for the route in the contrary direction."

Fate Unknown.

Other than the trials of the car in Sydney, nothing has been learnt concerning its movements. From other sources it is known that, about this period, both Melbourne and Adelaide had trial runs with a similar car. This may have been the same car, but, as to its ultimate fate, no record has been brought to light.

(The Melbourne car was tried out in Toorak Road and such evidence as is available suggest that it was, in fact, the car described in the foregoing article. Any further information would be welcome.—Ed.)

UNCLE BOB REMEMBERS

By W. L. Bailey.

"Speaking of trams" (which we were not), said Uncle Bob, settling back in the lounge, "reminds me of the days I was a driver on the Railway-Circular Quay circuit."

"I used to start my shift down at the Quay, and this day, as usual, I said to the chap I was relieving: 'Well, Jack, how's the old chariot to-day—pulling okay?'

"'As a matter of fact, Bob, she's not pulling too clever,' replied Jack.

"'Well, why the —— didn't you turn her in and get another?' I responded irritably. 'Anyway, what the trouble?'

"'She's slow at getting away from the stops,' he replied before he left, and, by cripes, he was right! She was slow. Every stop was the same story —a slow getaway, and then she'd be okay till the next stop. However, I noticed that, as the load got heavier, she improved. Suddenly I smelt a rat!

"When we reached the Railway line-up, I had a few minutes to spare, so I got the conductor to give her a few notches, whilst I watched the wheels, and what do you think?—those wheels were revolving in their own tyres! I wasn't slow in turning her in, either!"

(Another Uncle Bob story next month.)

ERRATA

It is our desire to provide an accurate and complete record of current events on the railway systems and tramways of this country. Readers who notice errors or omissions in our columns are invited to write to the Editor.

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THE TROLLEY-BUS STOP

RURAL SERVICES

Trolleybus services in Australia, and, indeed, in most countries, are of an essentially urban character. Notable exceptions occur in both Germany and Switzerland, where these vehicles are used on interurban services of very low traffic density. Even more surprising is that, while in some cases they have replaced diminutive rural tramways, a growing tendency exists to use them in place of buses.

Latest of these services is that recently established between Neuchatel and Les Hauts-Geneveys, a distance of twelve miles. A fleet of five trolleybuses suffices to provide all services — the normal headway is approximately hourly. Two short tramways in the towns named, together with a connecting bus route, have been replaced.

Standard 600 volts supply is used, in contrast with an earlier Swiss interurban line, which employs 1,000 volts.

SO YOU WANT A JOB IN THE RAILWAYS/TRAMWAYS

From time to time we are asked by enthusiasts whether we can do anything to help them to obtain employment in the professional railway or tramway sphere. In almost all cases, regrettable as it may seem, enthusiasm alone is not sufficient. Virtually every type of work, other than that of porter, conductor, clerk, or labourer (all of which are advertised frequently), requires experience or a maximum age of 16—the old principle of "catch 'em young and train 'em" is standard.

For those prepared to put up with some years of hard routine work, there is a way. A senior officer of the Melbourne tramways commented recently that many of his colleagues started as conductors. With the present staff shortages, there is a really good opportunity for keen men in the traffic side of both railways and tramways. It may take a while, but you can get there!

This issue marks the beginning of the fifth year of Traction Publications.

In May, 1946, we surveyed the 20 copies of our 6-page duplicated sheet and wondered if we had been rash. Now we are sure!

"HEADLIGHTS" At Reduced Rates

AETA members only may subscribe to "Headlights," the monthly journal of our good friends, the Electric Railroaders' Association, at the reduced rate of 12/9 yearly. This very generous discount is made possible by reciprocal arrangements between Traction Publications and the ERA. Non-members must pay the full rate of 22/6 yearly.

To obtain "Headlights" for 12 months (all subscriptions run from January to December of each year), write now to Traction Publications, 29 Seymour Grove, BRIGHTON BEACH, S.5, Victoria, enclosing postal note and stamps, or cheque for 12/9.

THE AUSTRALASIAN RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY
(Founded 1933)

AFFILIATIONS—The New Zealand Railway and Locomotive Society.
The Australian Electric Traction Association.
The Light Railway Transport League (London).

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BULLETIN EDITOR: Mr. M. A. Park, 10 Dunstaffenage Street, Hurlstone Park, N.S.W.
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AUDITOR: Mr. S. C. Whalley.
RECORDER: Mr. J. C. M. Rolland.

MEETINGS

The Society holds its Sydney meetings at the Railway Institute, Devonshire Street, Sydney, on the second Tuesday in each month. All visitors are welcome. In Melbourne, the Society's meetings are held at the Railway Institute, Flinders Street, Melbourne, on the fourth Thursday in the month. All visitors are welcome.

FINANCIAL

The Subscription rates are fixed at 12/- per annum, which includes the Society's printed Bulletin. Subscriptions are payable in advance. Members in Victoria, South Australia, Western Australia or Tasmania should remit to Victorian Treasurer, and all other members to the General Treasurer.

GENERAL

Back numbers of the Bulletin are still available, and members interested should write to Mr. G. C. Taylor.

Communications in connection with the Bulletin should be sent to Mr. M. A. Park, who will be pleased to receive articles or notes on railway affairs, both historical and current, which might be suited for insertion in the Bulletin.

INTERSTATE REPRESENTATIVES

In addition to the Victorian Branch, the Society is represented in South Australia and Tasmania by the undermentioned members, who are official representatives in their respective States:—

SOUTH AUSTRALIA: Mr. O. Thomas, 31 Torrens Rd., Hillside, S.A.
TASMANIA: Mr. K. Flood, 140 Wellington St., Launceston, Tas.

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A.E.T.A. NOTES

MELBOURNE BRANCH

Life pursues the even tenor of its way at present in Melbourne. There have been no alarums and few excursions in recent weeks, though we remain ever conscious that virtually anything may happen at any time, and are prepared to react accordingly.

June Meeting.

At the June meeting the promised episcope was not present, through a mishap on our part, and this is to be remedied at the July gathering. In place of the planned topic, Mr. Ross Paterson-Baird gave an impromptu talk on the tramways of Adelaide. His appreciation of the situation and operating methods there was little short of amazing, as was his grasp of detail. A well-filled photograph album added to the interest of the evening. Our thanks are due to Mr. Paterson-Baird for so ably filling the gap.

July Meeting.

All being well, the episcope will be used at the July meeting, to project views of little-known overseas tramways. Commentary will be provided by the owners of the photographs used.

Looking at Brazil.

On Friday, 4th Augut, Mr. J. Richardson will give a talk based on the magnificent material on Brazilian tramways sent by our Uruguyaan member, Senor J. Baird. The tramways of Brazil, particularly those of Rio de Janeiro, are quite unlike anything else yet encountered, and members will find much to interest them.

KING'S BIRTHDAY HIKE

Following the success of the Cranbourne hike some months ago, a similar outing was arranged for King's Birthday. On this occasion, fourteen members and friends travelled to Winchelsea. The journey was by suburban electric train to Thomastown, on the extreme outskirts of Melbourne, thence by petrol-electric car. The latter sported Victoria's one and only Brill trailer, and the resemblance of this vehicle to the lighter interurban cars of the U.S.A. was remarked upon. This atmosphere was heightened by the roadside stops at level crossings, where no platforms were provided and the ground-loading steps were used.

After an al fresco lunch on a pile of sleepers in the station yard, the party hiked to a location beyond Humevale, where some twenty old four and six-wheeled passenger cars of the Victorian Railways are in use as holiday homes. Some have been much built upon, but the majority retain their original appearance. During the return to Winchelsea, a halt was made to cook a traditional Australian picnic tea. Much charred sausages appeared to constitute a principle part of the diet of many!

For the return journey a steam train ran to Thomastown. The loco. used was D3 class, No. 635, which is used to haul the Commissioners' Special, and is much better kept than others of her class. Opportunity was taken during the day to examine this loco., the services of "amtractious" (there must be a word to describe fans who follow steam and electric traction with equal enthusiasm) members were much in demand.

The success of the outing was unquestioned, and proved the value of an occasional departure from the usual run of traction outings. It was decided unanimously to devote next King's Birthday to a similar trip to Moe, and over the narrow gauge line to Erica, this being the one day in the year on which the return journey is possible under suitable conditions.

SATURDAY, 10th JUNE, SEES LAST NEWCASTLE TRAM
A.E.T.A. Members Present.

Small parties of A.E.T.A. members began leaving Sydney for Newcastle as early as Friday afternoon in order to photograph and ride upon for the last time a Newcastle tram route — that to Waratah. Those making the trip included Ken McCarthy, Geoff. Johnson, Norm. Chinn, Arthur Perry, and Ben Parle, while Newcastle members included Ken Magor, not to forget Ken Winney, whose presence was very much a necessity — he prepares timetables for the Newcastle system!

Many fine photographs were taken (What about one for this page?—Ed.), and friendships renewed on this tour. The co-operation of the tramway staff was excellent, enhancing the success of the occasion. During the course of the day, a statement was given to the Press.

The last tram to run was No. 147 (L/P class), about fifteen A.E.T.A. members being on board for the last trip. The journey out to Waratah began amid ribands of streamers, some of which were thrown to passing motorists, who, in turn, kept up a steady honking of car horns. Detonators, crackers, and rockets helped to give the tramway system of Newcastle its well-deserved farewell.

Such celebrating must not, however, be taken as an indication of the desire of the people to see the last of their trams. Proof to the contrary is provided by the request made to A.E.T.A. members by the public and by tramwaymen for a full report on rehabilitation of the system. This report is now nearing completion, and will be offered to the proper authorities and the Press.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone: LF 1665)

If outside Victoria, communicate with the nearest representative:

ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND: Mr. G. C. Stewart, 74 Fowlds Ave., Sandringham, W.2
BALLARAT: Mr. W. Jack, 31 York St., Ballarat East, Vic.
BRISBANE: Mr. F. A. Andrews, 35 Stephens St., Morningside, Q'ld.
CHRISTCHURCH: Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON: Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON: Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.

OVERSEAS ITEMS

GAS TURBINE LOCOMOTIVE
British Railways Experiment.

Newest development in motive power on the British Railways is the Gas Turbine locomotive No. 18000. This experimental machine was originally ordered by the erstwhile Great Western Railway from the Brown Boveri Company, of Switzerland, whose efforts in this field are already well-known. The new locomotive will be used in regular passenger service on the run from London (Paddington) to Plymouth on the Western Region. Fuel is carried for a 250-mile journey, and the maximum speed is 90 m.p.h. Other details are as follows:—

Tractive effort: 31,500 lb., at starting and up to about 21 m.p.h., dropping to 12,400 lb. at 64 m.p.h., and 8,400 lb. at 90 m.p.h. Adhesive weight: 174,000 lb.; diameter of driving wheels: 48½ in.; carrying wheels: 38 in.

The gas turbine drives an electric generator through gearing, and the current is employed in four traction motors, two being caried on each of the two six-wheeled bogies. Drive is transmitted through Brown Boveri individual axle drive with quill stump and spring coupling, achieving a considerable reduction in unsprung weight. Total weight of the locomotive is 115 tons. Length is 63 ft. overall, and height 13 ft. 4 in.

LONG TRIP FOR LONG GIRDERS

An unusual job for British Railways was the conveyance of three 93 ft. girders from Millwall to Deptford. The distance as the crow flies is six miles, but the roundabout route taken to avoid obstructions totalled 52 miles, including a short distance by road. The absence of suitable roads at the destination site necessitated the use of railway facilities.

EXCURSIONS AGAIN

Post-war conditions have not encouraged railway travel in Great Britain to any extent, high fares and curtailed services being the rule. Recently, strong efforts have been made to encourage a revival of excursion traffic; a typical example is a recent excursion from Glasgow to London and return (400 miles each way), with three meals, a motor tour, and a theatre, for the inclusive price of £5/7/6.

DIESELS FOR EAST AFRICA

The first diesel locomotives on the Tanganyika section of the East African Railways and Harbours commenced operations recently. Of 204 b.h.p., they are intended for light freight and passenger traffic on this metre-gauge line. Provision is made for future conversion to 3 ft. 6 in. gauge.

ONE FOR RIPLEY!

In a remarkable incident on the Milwaukee Road, the leading unit of the 4,000 h.p. diesel-electric locomotive of the eastbound "Olympian Hiawatha" uncoupled itself and ran 18 miles out of control. The crew remained in the cab helpless, the accident (the train was run into by a heavy truck) having destroyed all means of control or braking, as well as bell and air horns. Running on a falling grade, the unit sped right through the busy railroad centre of Milwaukee, including the Union Station, finally coming to rest on a rising grade. Warning was telephoned ahead to clear tracks and level crossings.

NEW AMERICAN RAILCAR
Budd RDC-1.

The biggest news in American railroading in recent years is undoubtely the revoluticnary new diesel-electric railcar bv Budd. Dimensions and general appearance are similar to those cf the newer standard lightweight passenger cars. Speed is over 80 m.p.h. Running costs appear to be low in comparison with a ncrmal branchline or subsidiary mainline passenger train, and the new car is expected to save more than one branch line from extinction as a passenger carrier.

Following the successful precedent of the well-known PCC tramcar design, the new railcars are built to a standard pattern, special orders being discouraged. This cuts costs and cheapens maintenance.

Three types are available. The RDC-1 is an all-passenger car, rather like a giant interurban in layout; the RDC-2 has a baggage compartment; finally, the RDC-3 has provision for mail and express in addition.

We hope to publish full details and pictures of this car, which might well find a place on Australian lines.

IRISH LINE CLOSES
Belfast and County Down Railway.

Faced with the financial problems which have brought about the demise of smaller lines in Northern Ireland, the Belfast and County Down Railway is discontinuing rail service. Buses and trucks will take over several routes, and others will be abandoned. At the time of writing, all minor lines have been closed, and only the comparatively heavily-trafficked Bangor and Belfast-Comber-Donaghadee lines remain.

U.S. FREIGHT LOADS DROP
Lowest since 1939.

Revenue car loads of freight on the railroads of the United States totalled 35,909,741 during 1949, a reduction of 15.9 per cent. on the 1948 figure, and the worst since 1939. As against this, average car capacity is rather higher, and both speeds and net ton-miles per train-hour reached record heights.

NEW ELECTRIC LOCOS.
Manchester-Sheffeld Line.

57 Bo Bo and 27 Co Co electric mixed-traffic locomotives are being built for British Railways, partly at the Gorton works, and partly at the Manchester works of the English Electric Co. Ltd. They will be used on the Manchester-Sheffield main line, which is being electrified on the overheard principle. It will be recalled that a prototype locomotive has been running extended service trials on the Netherlands Railways, which have extensive overhead electrified lines.

IN NEXT MONTH'S ISSUE

GEELONG—A VICTORIAN PROVINCIAL RAIL CENTRE, by Guy Bakewell.

MODEL RAILROADING—Another interesting article by K. N. Lowry.

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MODEL RAILWAYS in Australia

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CALLING ALL MODEL RAILWAY ENTHUSIASTS

Almost since the inception of RAILWAYS IN AUSTRALIA, we have been pressed to include a section for model railway enthusiasts. Shortage of space has prevented any move in this direction hitherto, but, with the altered publication arrangements this no longer applies, and we therefore present the first issue of "With Our Modelmakers."

It is not without a great deal of trepidation that we do this, for model railway journals have not had a happy time in this country. It appears that most model enthusiasts are too busy in the workshop or on the layout to bother about writing articles or descriptions of their systems. Yet they perversely expect the other fellow to do what they will not do themselves, and complain about lack of material or the utter inadequacy of what does appear.

Few genuine lone-wolf model railway enthusiasts make a good job of things; there are so many snags continually cropping up, so many problems to be overcome, that it is only by sharing knowledge and describing the overcoming of pitfalls experienced, by passing on the little wrinkles one acquires and in general acting as a member of the greatest of all hobby brotherhoods, that the best can be obtained from our hobby.

This issue is a beginning. We hope it will develop into a real national forum for all matters connected with model railways. It will, if readers write to us and send in details of their layouts (a sketch of the track layout should accompany these articles), or just some little helpful hint that has occurred to someone.

We don't mind whether you are live steam, electric, or clockwork; tinplate or super-scale; HO gauge or 7¼". All these have their supporters and some aspects of each appeal to everyone.

Don't be backward either; if you want to voice some complaint, comment, or request, we'll be glad to hear from you.

MODEL RAILROADING IN AUSTRALIA
THE NEED FOR STANDARDS
And A Case For Their Adoption
By K. N. Lowry

Model railroading in this country has grown up the hard way. In other countries the pioneers encountered similar difficulties, but their larger populations and industrial set-up ensured that, once the hobby became popular, supplies of equipment would be readily obtainable.

With no local source of supply, our veterans had to rely on their own ingenuity and whatever could be imported from overseas, mostly from Britain. The British, who started the hobby but thereafter seemed content to rest on their laurels, did not develop a uniform set of standards; and, as many of our modellers were not content to follow British prototype, and, therefore, built to local or American prototype with whatever parts were available, the early local model systems were a hybrid of tinplate and scale, locos. and cars of Australian design built over English mechanisms and bogies, and mixed wheels and couplers. Each modeller had to resort to individual standards, to enable him to operate the equipment he had bought or built. As the hobby expanded, supplies from overseas became more plentiful, but still to foreign prototype and still as hybrid —Yank and German tinplate, British tinplate and semi-scale — and the standards became more varied and chaotic.

Certainly, we have developed a breed of highly competent modellers, who have learned to improvise and build their model systems with a minimum of commercial parts; but the supply situation has restricted the hobby to a small exclusive group, who have had the ability and enthusiasm to follow their hobby without the aid of commerce. It has meant the loss to the hobby of many a potential model railroader, discouraged by the lack of suitable equipment to give him an initial boost until he gets the feel of things and the confidence to tackle construction.

In recent years, local manufacturers have entered the model railway supply field, but most of them have done little to alleviate the mix-up of standards. In some cases, the reason has been sheer commercialism —knowing little and caring less about model railroading, they have cashed in on the supply game, with equipment copied from existing commercial goods, and with no consideration for the precision necessary in working model parts. However, in fairness to the bulk of local manufacturers, they are faced with a tough proposition in the maze of different standards — differing in individuals, differing in districts and States; so perforce they have either developed their own standards, or followed those used on the more popular British makes.

To date, the most practical way towards eliminating the mess has been the formation of an Australian branch of the National Model Railroad Association — an organisation founded in U.S.A. for the express purposes of defining and setting up model railroad standards, promoting closer understanding and co-operation between modellers and manufacturers, and good fellowship between all model railroaders. The Branch and the objects, especially regarding standards, have been received by many of the veteran modellers with either indifference or antagonism. This opposition is not warranted, as the adoption of standards need not affect them individually. They have built their systems, worked out standards that suit their requirements, and they buy little or no commercial parts. Further, to acknowledge the standards and objectives in principle does not carry the compulsion to tear up an existing railroad and start again. What is important is that most of us, who are veterans to-day, received advice and assistance from chaps who were in the game when we started, and in the interests of our hobby we should do likewise for the new chums who join the ranks each year, and help them avoid the traps we fell into.

Conceding the need for standards, it may be asked why we should adopt those followed in U.S.A. Why not develop our own? Well, first let me assure you that this is not a trap to drag us in as the 49th State of "Gard's Own Country." Politics and Parochialism have no place in this hobby, and acknowledgment of achievements in one specialised field does not entail hero worship of the Land of the Free. The cold fact is that U.S.A., by virtue of favourable circumstances, has developed our hobby more than any other country —and while we like to sneer at them as a bunch of kit-builders, they can have a model pike built and going in a few months, where it takes us years, and, because of the N.M.R.A. Standards, they can purchase work-

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ing parts from the various reputable manufacturers, with the assurance that the different makes will operate on the one system.

When the N.M.R.A. was formed about 14 years ago, the hobby in U.S.A. was just as chaotic as it is in Australia to-day. With our small population and limited scope for model manufacture, we cannot expect to achieve the same spectacular results, but we can improve things considerably by following the lead given.

It is commonly believed that the N.M.R.A. Standards are super-scale, something beyond the scope of the average modeller. This is not so. Basically they are Commonsense — not an arbitrary scaling down from prototype, but the nearest practical dimensions consistent with satisfactory operation in the gauges to which they apply. They have been developed by active model railroaders over a long period, and thoroughly tried and proven before being adopted. They do not entail loss of individuality in the building of your railroad—there is no fear of everyone having the same Locos., Cars, Track and Scenery. They apply only to those items that affect the working of every model railroad — Track, Wheels, Electric Traction, Couplers, Clearance, Rail, Bolsters, Axles—and even there, the standards only apply to working dimensions and shape or contour of key parts. Except for rail section, in which our scope at present is limited, all the standards can be applied to local conditions. The close tolerances stipulated for many working parts are no bug-bear to the modeller. As a rule he leaves to the manufacturer such matters as making Rail, Wheels, Motors, Axles and Couplers, so the onus is on the commercial man to embody the required precision in the product, and if items are purchased that are approved as being in conformance with N.M.R.A. Standards, it is a guarantee that the parts are made properly and can be used without misgivings. With such reliable Standards available, it would be futile and sheer obstinate insularity to ignore them and start working out a complete new set of standards for local use.

To the old hand, all this means little. To the newcomer it means that if the N.M.R.A. Standards are adopted by enough model railroaders, eventually your local suppliers will realise the advisability of falling into line with your requirements. That means you will be able to buy equipment and parts with the assurance that the locos. will operate on your power supply, the wheels clear your point frogs, and bogies and bolsters raise your cars to a uniform height, and your couplers mate. Having battled for years with ill-assorted material, I think this uniformity is something worth striving for.

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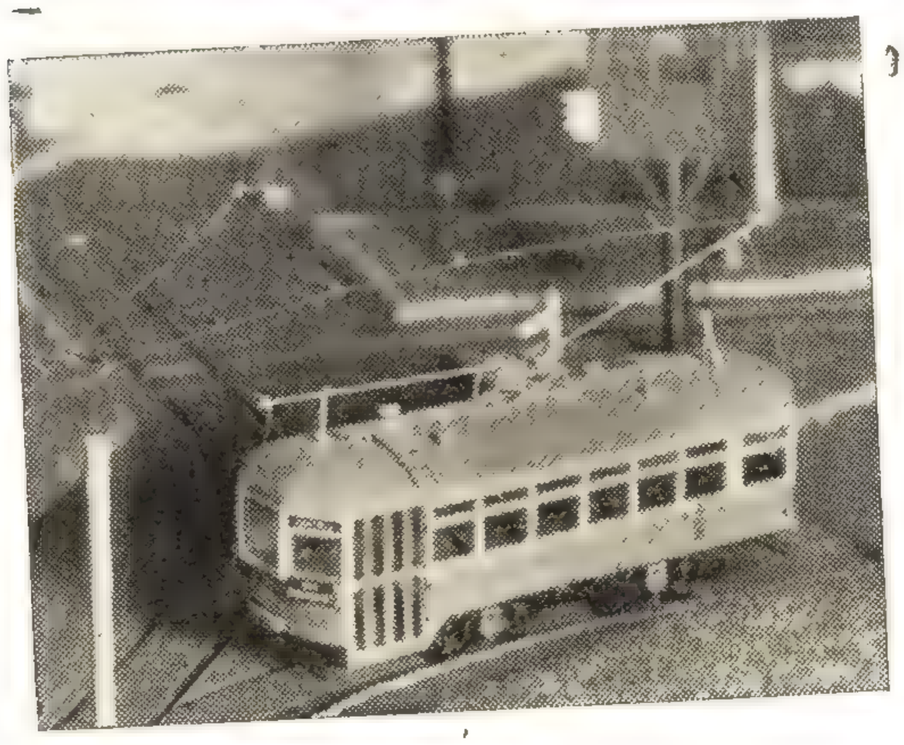
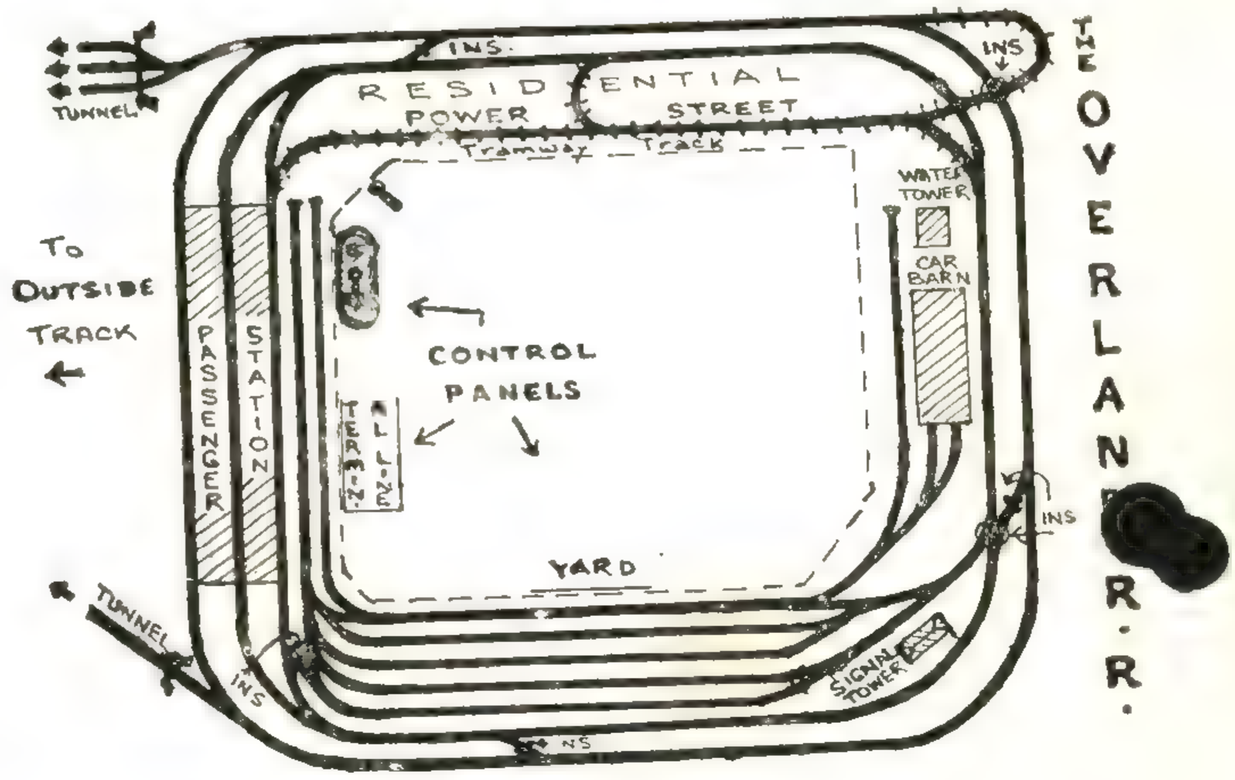
THE OVERLAND RAILROAD
An Overhead Wire System
By The Armchair Man





FOREWORD

When the writer of these notes first set eyes upon the Overland Railroad some six years ago, he marvelled at the attention to scale and detail and, above all, the completeness of everything, all of which far exceeded anything he had ever seen before—or since, for that matter. When this was mentioned to Mr. Duckett, he simply observed that no model railroad was ever complete and that he was even then planning the replacement or improvement of much of the material concerned. What then seemed impossible has since become a fact, and the changes are still going on to a planned programme. Here, then, is an account of the Overland Railroad, its genesis and growth.

The Overland R.R.

The railroad commenced operations in 1935, under the auspices of the present owner's father, in a building 12 ft. x 12 ft., especially erected for the purpose. The line was originally powered with steam-outline locomotives of conventional type. Operations were extended gradually, until, at the end of 1938, 166 ft. of O gauge permanent way (bullhead section rail) was in use. Raised centre third rail was employed and control was by means of three panels. Over this track were operated the following:

Ten miscellaneous locomotives of both steam and electric outline, from the firms of Seki, Lionel, Hornby, Bassett-Lowke, and Marklin; 13 miscellaneous passengers cars, and two baggages cars by Lionel and Hornby; 25 freight cars, some from the ORR shops, the remainder by Hornby, Leeds, Lionel and Marklin.

Construction of 110 ft. of outdoor track was commenced late in 1938, and was completed in March, 1939. Permanent way was laid with Austral Bronze rail throughout, in 15 ft. lengths; expansion joints every 7 ft. 6 in. were added at a later date. At this stage, some 310 ft. of track were in use.

At the close of 1939, the road passed completely into the hands of the present owner, and was completely reorganised, a long-range plan being adopted for conversion to all-electric service. This called for the rebuilding of almost the entire indoor layout, and the scrapping or conversion of the bulk of the motive power and rolling stock. This programme has been pursued vigorously and is still in progress, still further developments having been decided upon during the intervening years.

Trackage now totals 298 ft., comprising 166 ft. of interurban main line, 69 ft. of terminal urban line, and 63 ft. of yard tracks. 164 ft. is electrified with single-wire overhead, the remainder having centre-third rail, with some short sections carrying overhead as well as third rail. Three control panels are provided governing operations on the three sections respectively. That used for the main line is a full-size tramcar controller, acquired from the Melbourne and Metropolitan Tramways Board some years ago, together with an air brake handle and mounting. An illuminated diagram shows the progress of trains on the outdoor section, most of which is out of sight from the control position.

Three single truck interurban electric motors provided the freight motive power for some years. Mo[re] recently a huge B-B. loco. of Amer[i]can design was obtained and modified in the ORR shops. This powerful machine will haul as many as 70 bogie freight vehicles. When first introduced, its weight caused damage to tracks, especially special work, but this has been rectified. The smaller locos. are to be converted to B.B. types, the trucks and axle-mounted motors having already been constructed in the ORR shops. (This is a story in itself and one which we hope to relate in these pages before long.) All locos, use trolley-poles for current collection, one having a pantograph in addition for shunting purposes.

Passenger service on the main line was given until recently by a streamlined diesel-electric train, but this is now out of use, and will be replaced by four multiple-unit interurban cars, one of which is stored complete, except for motors.

A subsidiary company will operate a fleet of Birney cars serving the residential area and the principal passenger station. One of these cars is shown in the accompanying illustration.

As the line is essentially a freight carrier, there is a considerable stock

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of bogie freight cars of American design, with a few 4-wheelers remaining from former steam days. Rear-end accommodation is provided for train crews in, of all things, a V.R. "Z" van. This vehicle, however, does not seem as incongruous as might be expected.

To house the passengers stock a car barn was constructed, based on the original depot of the North Melbourne tramways in Mt. Alexander Road, but scaled down to accommodate four bogie cars. An article on this structure will appear shortly, so it will suffice to mention that such details as troughing for overhead wires, illuminated inspection pits, and the usual grease marks, weeds, "illegal" paths made by short-cutting employees, old wheels and other impedimenta appear, together with an exact replica of a Grinell sprinkler system. The latter necessitated provision of a large water tower, the original for which will be found at the Glenhuntly depot of the M. & M.T.B.

Signal towers at the Power Street crossing and at the yard entrance contain such details as telephones and desks, and are illuminated when required, as also is the three-track passenger station. Other railway items include trackside phones and various types of indicator boards; there are also stacks of rails and other per. way material. The tramway section reproduces faithfully many features of the full-size tramways of Melbourne, even to a set of "Power On-Power Off" points.

Final touches are added by the houses in Power Street. Mr. Duckett recently rebuilt these with much added detail, several books on domestic architecture receiving a good thumbing in the process. Sundry cats complete a thoroughly suburban atmosphere.

Basically, the Overland R.R. is an interurban with extensive belt facilities in its parent town. So far, the usual lineside industries have not appeared, owing to lack of space, but we understand that something is brewing in that line for future construction.

As mentioned, it is intended to cover certain aspects of the Overland R.R. in greater detail in future issues.

(The Overland R.R. may be inspected by arrangement with Mr. Duckett; arrangements should be made well in advance, however.)

ROSTER OF MODEL SYSTEMS

BALWYN PACIFIC (O) electric, raised centre-third, NMRA standards, K. N. Lowry, 3 Caroline Street, Auburn, Vic.

BAY SHORE & SOUTHERN (O) electric, overhead, NMRA standards, J. Richardson, 29 Seymour Grove, Brighton Beach. Vic.

HAPPY VALLEY (O) electric, 2-rail, 17/64 in T. Dunlop, 6 Belmore Rd., Warrnambool, Vic.

MAYFIELD LINES (O) clockwork, outdoor, N.S.W.R. prototypes, L. A. Clark, 181 George St., Parramatta, N.S.W.

OVERLAND (O) electric, overhead and centre-third, indoor and outdoor, NMRA standards, P. W. Duckett, 69 Howitt Rd., Caulfield, Vic.

TWOBEA & WESTERN (HO) electric, centre-third, B. Ballment, 44 High St., Harris Park, N.S.W.

(Let us have details of your system for inclusion in this roster.)

OUR COLUMNS ARE AVAILABLE TO MODEL SOCIETIES

While most model societies and model railway clubs have their own regular journal, there are many events and items of interest to enthusiasts throughout the Commonwealth which might well be made known more generally.

These columns will be made available to any organisation which cares to make use of them. We particularly invite those clubs which have not the opportunity to produce their own news-sheet.

S.O.S. Corner.

Any enthusiast with a problem which is beyond him is invited to send it to us for publication. There is certain to be at least one of our readers with the answer.

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Live Steam

A FASCINATING HOBBY

Despite the undoubted attraction of electrically-powered model railways, there is an added fascination in reproducing in miniature the "genuine article"—locomotives powered by live steam.

Although working models have been produced in HO, the difficulties of construction and operation call for the skill of the expert craftsman, and O gauge is considered the smallest practicable for steam. Even here, it is only rarely that the realism of coal firing is attained and, generally speaking, the smallest practical gauge for coal-fired locomotives is 2½ in. Visitors to hobby exhibitions will recall the many beautiful and powerful machines in this popular gauge.

Passenger haulage is possible with 2½ in. gauge locos., but it involves drastic departures from realism, as well as a good deal of discomfort. It is quite common in the 3½ in. gauge, and normal in most larger gauges. Of these, 7¼ in. is the largest in general use in Australia. The most extensive 7¼ in. line in this country is that built by Mr. Clem Meadmore, whose track winds for a distance of one mile through scenic Chelworth Park, Ivanhoe, near Melbourne, and which is to be operated publicly for charitable purposes. Even larger are the 10¼ in. gauge lines to be found at beaches and amusement parks.

From the smallest to the largest, these mighty midgets exercise their fascination on a growing band of enthusiasts, who may be distinguished by the wearing of overalls, engineers' caps, and a general air of contented grime!

RAILFANS' WALHALLA

The following lines, the origin of which is unknown, must have been quoted many times, but they will be new to some, at least, of our readers:

"And Lord, in the world we're called to
May there never be a lack
Of super-detailed locos.
And winding O gauge track!"

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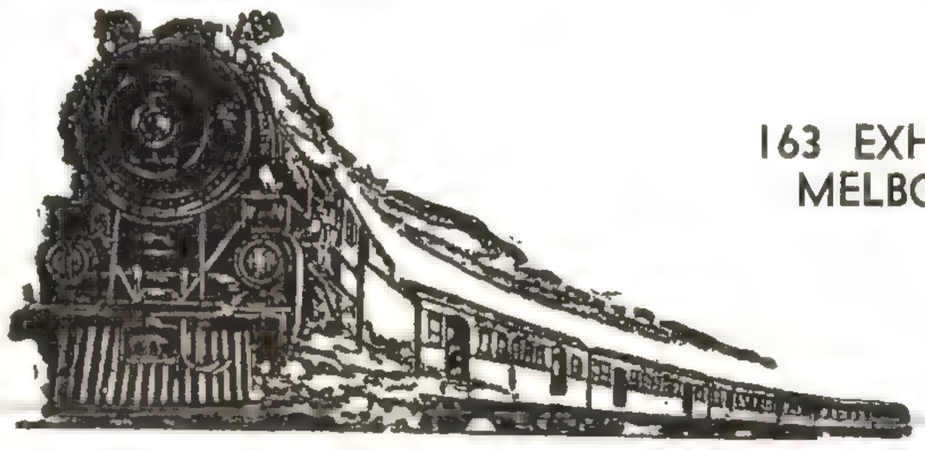

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TINPLATERS

Gone are the days when the adult owner of a tinplate railway produced it furtively and in solitude! Not that one could blame him, for, in most cases, the tinplate model railway was little more than an expensive toy. Shortly before the recent war, however, several manufacturers were marketing near-scale products of really fine appearance. In fact, often the only concession to mass production was the unavoidable stamped-metal appearance of rolling stock, and the wheel contours.

Since the war's end, further improvements have appeared and it should not be long before tinplaters can operate really fine model systems. In particular, the American firm of Lionel is producing first-rate near-scale models, and the present trend towards an easing of the dollar position suggests that we may soon see them in this country.

At present, also a stranger to the Australian market because of similar currency problems, the fine Swiss products by Messrs. Richards will also be most welcome. The sets by this firm include demountable, working overhead wiring, and a "twin" control arrangement.

Not everybody is able to indulge in the luxury of a permanently laid system, particularly in these days of housing shortage—folding bases notwithstanding—and for those unable to do otherwise, the tinplate pike can be the means of satisfying that urge which we all know.

HELPFUL HINTS—WE HOPE

Overhead Wiring Joints.

This hint comes from America. We can't vouch for its effectiveness (editing magazines keeps modelling on the shelf these days!), but you may like to try it.

No need to heat up the soldering iron when joints in trolley or catenary overhead come apart—just apply soldering paste to the offending joint, then hold a lighted match under it. This will resolder it firmly.

Lost Screws.

Keep a small horseshoe magnet — the toyshop variety — handy when working at the bench. This will retrieve lost screws and other steel items more quickly than you can, if you keep it on the end of a string and cast it on the floor in the general direction of the missing item.

No More Humpty-Dumpty.

If you have to hold a model railway vehicle upside down on the bench to make some alteration or adjustment, nine times out of ten it will overbalance at the critical moment. (That one comes from bitter experience!).

This can be overcome by knocking up a simple stand out of scraps of wood. Try it sometime.

Tricky Soldering.

Those of us who have done a bit of soldering — and which of us hasn't? — will like this. Remember the number if times when, just as you soldered two parts of an intricate little gadget, a third came unstuck because of the heat? You can get rid of the unwanted heat by wetting a piece of face tissue (the kind you get from a chemist or a chain store) and lay it on the work.

Oiled Wood Floors.

To obtain a natural oiled wood appearance for such items as flat car floors, etc., apply successive coats of iodine until the desired effect is obtained, writes Charles Gaff in the "Model Railroader."

MODEL RAIL ODDITIES

Anything Goes.

One of the leading model railway enthusiasts in this country has always maintained, in and out of season, that, while model railways should be as realistic as possible, and everything should have a story to justify its existence, there is no reason why one should not do the unorthodox—there is bound to have been a precedent in full-size operation somewhere.

This contention is borne out by a report in the "Model Railroader" that a gondola car was seen at a certain factory with trucks of an entirely different design at either end!

Narrowest Narrow Gauge.

Also reported in the "Model Railroader" is what must be one of the smallest model systems in existence.

This is a representation of the Denver and Rio Grande lines on a baseboard 14 ft x 1 ft.—HO, of course! There is both freight and passenger service, and the scenery includes "mountains, flagstops, and everything."

TURN OUT THAT SKELETON!

Just how much model railway equipment lies stored on the top shelves of spare-room cupboards, we shall probably never know. If you have such a skeleton in your cupboard. why not rid yourself of it profitably?

An advertisement in RAILWAYS IN AUSTRALIA costs little (1/- for 5 lines if you are regular subscriber), and may find just the right buyer.

Similarly, if you are a potential buyer of cupboard skeletons, why not advertise and lure one out?

Block instruments. The general signalling practice follows the familiar Mackenzie and Holland pattern, familiar in Victoria, Western Australia and New Zealand. The Train Staff and Ticket system also is in force on the Emu Bay Railway, whilst the Mt. Lyell Railway uses a system of Telephone Train Control, which seems to adequately meet their requirements. There is, as yet, no automatic signalling or power interlocking in use, although there is one isolated power-operated signal of Automatic upper-quadrant type on the Main Line near the infamous Ryndaston Tunnel—almost three-quarters of a mile in length and the only one on the T.G.R. system. The only other railway tunnel in Tasmania is the much shorter Argent Tunnel on the E.B.R., near Roseberry. Of course, there are purely mining tunnels along which railways are laid, such as the entrance to the famous Lyell open cut near Queenstown, owned by the Mt. Lyell Co.

(To be concluded.)

(A map showing all Tasmanian lines will be included with the final instalment.)

BOOK REVIEW

TRAINS
By Robert Selph Henry.
Mid-Century Edition.
The Bobbs-Merrill Company.

To the discerning railfan reader we need say no more than that this is a book by the author of "This Fascinating Railroad Business." To the newcomer we would say that, if you want the story of American railroads in one book, this is the book. "Lavish" is the only word to describe the treatment by both author and publisher. However, a reviewer likes to get in at least one critical word, and, in this case, we noticed that, although additional chapters and pictures have been added to the original edition (1934), the wording of some of the original matter has not been brought up-to-date, giving an incorrect impression in some cases. Don't let this deter you—it's a book worth having; and, in the light of the current dollar situation, it may not always be available. We'd say "Buy now — you won't regret it."

(128 pp. with hard cover, 12⅛ in. x 9½ in. — Our copy, McGill's Agency, 30/-.)

SMALLEST OF ALL

Which is the smallest gauge? HO, you say? Or, being a reader of American magazines, TT gauge?

Not at all; obviously you haven't heard of Treblo. Trains on this gauge run on 5/16 in. track, and are built to a scale of 2 mm. to 1 ft.

We hope to tell you more about this before long.

THE PECO PLATELAYER'S MANUAL
By R. Watkins-Pitchford.
(The Pritchard Patent Product Co. Ltd.)

Understandably, I think, my first thoughts on receiving this book were: "What kind of model railway track is it that a whole book is required to explain it?" Further investigation speedily showed that it is not any difficulty in laying the track that necessitated the book, but that the methods used are so revolutionary, and the possibilities so extensive that the book is not only a technical necessity but a joy to read. The people behind Peco track are people with ideas, and they are to be congratulated on putting them in concrete form. Laying the track is simplicity itself, even when using the many advanced formations described in the book.

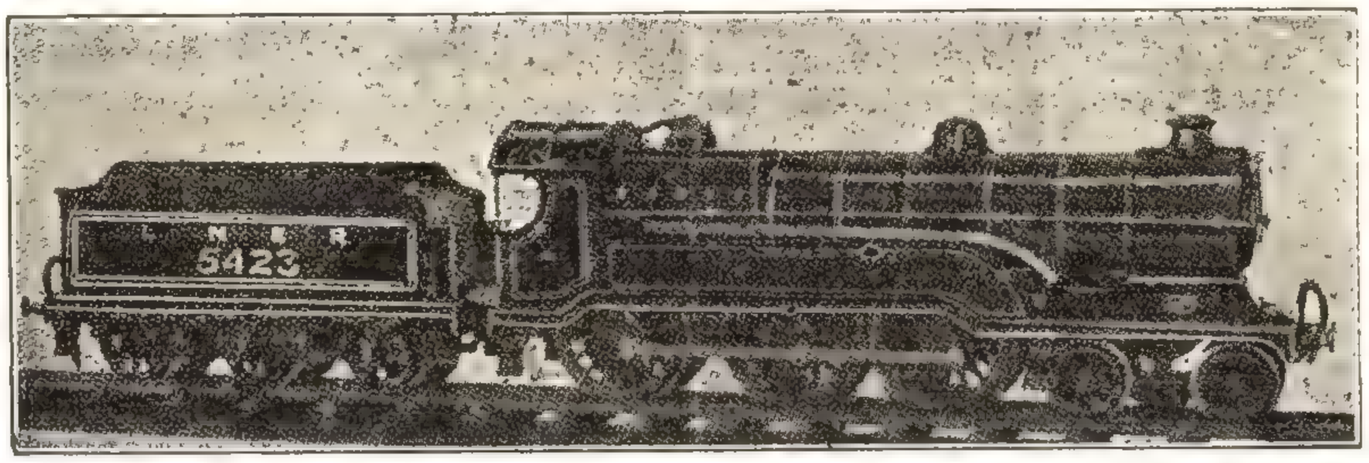
Although this work is frankly and unashamedly designed to sell Peco, it contains much information and advice of general interest. There is an admirable introduction by Mr. Ahern, owner of the famed Madder Valley Railway, together with a plan of his layout, and many pictures of other interesting systems, together with several views of full-size track and special work.

(88 pp., 8 in. x 5 in.; our copy from Hearns' Hobbies, 7/6.)

MODERN LOCOMOTIVES

By Brian Reed.
(Temple Press Limited.)

Locomotives of whatever kind exercise a fascination over young and old alike in every part of the world. Just how many books have been written about them it is hard to say. The



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hundreds now on the market find ready buyers. No doubt, if locomotives should ever cease to exist, books will still be written about them and read hundreds of years afterwards.

This newcomer to the locomotive library is well illustrated with beautifully clear pictures on glossy paper, and there is a really fine full colour plate. In addition, there are diagrams and sketches to illustrate the text, which is clearly, adequately, and simply written. In pleasing contrast to many railway books, the pictures are right up-to-date.

(86 pp. with hard cover, 10 in. x 7½ in.; our copy Meadmore Model Engineering Co., 10/-.)

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Letters to the Editor

Readers are invited to write letters for publication on any matter concerning railways or tramways in this country. Noms-de-plume will be printed, but in all cases the reader's correct name and address must be supplied when writing.

We do not print letters containing political or other contentious matter.

While there is no positive limit on length of letters, conciseness will be an advantage in securing publication.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

Meetings last Saturday night in each month at 8 p.m. in Club House, at above address.

Interstate visitors given warm welcome.

Secretary: R. R. Steward, same address.

THE AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY meets regularly as follows:—

SYDNEY BRANCH: Railway Institute, Devonshire Street, Second Tuesday in each month. Secretary: H. H. Matthews, 27 Ross St., PARRAMATTA, N.S.W.

MELBOURNE BRANCH: Railway Institute, Flinders Street, Fourth Thursday in each month. Secretary: R. B. McMillan, 15 Mercer Rd., MALVERN, S.E.3.

QUEENSLAND SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings every month; contact the Secretary, Mr. C. H. Garner, Gray's Rd., GAYTHORNE. Model Railway Section with operating O gauge, and HO under construction, meets first and third Mondays; contact the Secretary, Mr. C. Harrison (B3508), or the Public Relations Officer, Mr. C. McTaggart, 101 Laura Street, TARRAGINDI.

Fan Mail

The Editor regrets his inability to reply direct to correspondents, except in special circumstances.

There is still a very large backlog of unanswered mail which will be tackled as speedily as possible.

A. FRANKLYN PAIN, Waverton, N.S.W.: Thanks for your kind remarks.

Secretary, Railway Publicity Committee, Perth, W.A.: Thanks for info.; using this issue.

A. R. PAYNE, Eltham, Vic.: If I could be sure that the majority shared your view, I would do it. Thanks for the suggestion.

R. WIMBURY, Birmingham, England: Doncaster book sent; noted you require loco. book when it appears.

T. B. DODDS, Broken Hill, N.S.W.: Change of address noted.

R. KEAY, Bayswater, W.A.: Thanks for detailed information; should be most grateful for photo.

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

From the Secretary, Railway Publicity Committee, Perth, W.A., comes this reply to the query by "Light Engine," regarding a tall signal post at North Fremantle:

"The UP Distant signal at North Fremantle measures as follows:—From rail level to centre of arm (the official method of measurement)—55ft. 3in.; from ground level to centre of arm—57ft. 3in.; centre of arm to top of finial—4ft. 6in.; total height from ground to finial point—61ft. 9in.

"The post had to be so placed as to provide a sky view for the driver clear of the harbour lights. Posts are not now erected above 30 feet. Instead, where necessary, repeater signals are erected."

(Similar information was provided also by reader Ralph Keay, of Bayswater, W.A.)

READERS' WANTS

Member of the A.R.L.H.S. and bona fide subscribers to this journal may have small advertisements inserted at the nominal charge of 1/- for five lines. Forward postal notes or stamps (up to 2½d. value) with advertisement to the Managing Editor.

FOR SALE

Hornby Dublo electric tank set, transformer and controller, also 4 sets clockwork points, 11 lengths clockwork rail, 14 prs. brass wheels on axles (HO). Write to T. Cox, 8 Lilydale Grove, AUBURN, E.3, Vic.

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Contributions on railway and tramway matters welcomed. Articles, photos., etc., should be forwarded to the Managing Editor.

News items should be addressed as follows :
Railway News Editor,
Traction Publications,
29, Seymour Grove,
BRIGHTON BEACH, S.5
in the case of railway news, and
L. Marshall-Wood,
111 Esplanade,
ELWOOD, S.3
from tram and trolleybus news.

JUNE-JULY ISSUE

For publishing reasons, this issue is dated "June-July," 1950. For subscriptions and sales it will count as a single issue.

To bring us up to date, an "August-September" issue will appear next month.

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OUR COVER PICTURE—
Victorian Railways' new N class 2-8-2 No. 430, first new loco. to appear from Newport Shops for some years.

(Herald-Sun Feature Service.)

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GEELONG —

A Victorian Provincial Railway Centre

Situated 45 miles by rail south-west of Melbourne on the shores of Corio Bay, Geelong ranks next in importance to the capital of Victoria as an industrial centre and seaport. It has many points of interest as a tourist resort and is near various watering places which are popular in the summer. To the railway enthusiast it is an important and most interesting transport centre, and is the gateway to Victoria's great pastoral lands, the rich and fertile Western District, the southern part of which is crossed by the Geelong to Port Fairy railway line.

Queenscliff Branch freight train at Drysdale — Engine No. 566, D1 class (4-6-0).

by
GUY BAKEWELL
(Photos by the Author)

Geelong was first surveyed in 1838 when Victoria was still part of the colony of New South Wales. In 1851 a special legislature was provided to govern Victoria, two years after the Town of Geelong had been incorporated.

By this time the need for modern transport was making itself felt and on 8th February, 1853, the Geelong and Melbourne Railway Company was incorporated and authorised to construct a line between Geelong and Melbourne. This Company's line was opened between Geelong and Greenwich (now Newport) on the 25th June, 1857, and passengers continued their journey to Melbourne by ferry steamer for a few miles. On January 13th, 1859, the completion of a Government line from Melbourne to Greenwich (Newport) made through running from Geelong possible.

Victoria was only a young colony and the Geelong and Melbourne Railway Company got into difficulties and this led to the line being taken over by the Government in 1860 to form part of the Victorian Railways.

The next phase of railway development was in the laying of a line from Geelong to Ballarat in 1862. Then in 1876 the railway was continued beyond Geelong to Winchelsea and further extensions have formed Victoria's main South-Western line to Warrnambool and Port Fairy. A branch line from Geelong to Queenscliff was provided in 1879. Other branch lines worked from Geelong are those to Wensleydale (goods service only) and the industrial line to the Fyansford Cement Works.

The main line for passenger traffic is, of course, through Geelong to Warrnambool and Port Fairy. Through the war years and at present due to lack of coal and labour shortage, railway services are much restricted but in normal times the crack trains of the day were firstly the "Geelong Flier" from Melbourne at 8.22 a.m. doing a 45 miles non-stop run in 55 minutes including a seven mile stretch

(Continued on page 6)

Geelong Station and yard, looking north, during an unusually quiet period — presumably a Sunday.

SOUTH AUSTRALIAN GAUGE CONVERSION

The first broad gauge train from Wolseley entering Naracoorte Yard on 1/2/50, conveying the Governor, Sir Willoughby Norrie, and official party. 520-class 4-8-4 locomotive No. 525, "Sir Willoughby Norrie" was an appropriate choice for the motive power. The train consisted of CE brake van (joint stock), AE 1st Class car (joint stock) as staff rest car, joint stock sleepers "Acheron", "Finniss", "Torrens", "Angas", and "Cooliban", dining car "Adelaide", Commissioner's car "Murray" total 10 cars, length 747 ft., ss weight 495 tons.

(Courtesy S.A.R. Institute Magazine.)

For full details of Wolseley-Mt. Gambier conversion, see R. in A. for January, 1950.

WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

BRISBANE ELECTRIFICATION APPROVED
Further Report Adopted

The Queensland Minister for Transport, Mr. Duggan, announced that expenditure of nearly £9 million on electrification of the Brisbane suburban railway system has received Cabinet approval.

After the original report on electrification by Messrs. McDonald, Moffat and Egeburg had been considered in 1947, a further series of discussions was conducted; resulting in a member of the original Committee. Mr. J. Moffat, and a prominent Civil Engineer, Mr. N. V. Webster, being called upon for consultation with Q.G.R. Commissioner and Chief Engineer.

These officers examined new problems particular to Brisbane and further developments in electrification generally, the culmination of their investigations being a second report. Briefly the most important item is the increase in capital cost from the £4,646,160 given in the 1947 report to £8,853,000 — both estimates being prepared on the 40-hour week. A detailed estimate of cost is included.

The major reason for the increased expenditure is that all 60 lb. tracks are to be relaid with 94 lb. welded rails, the strengthened tracks giving smoother riding and reduced maintenance, for the existing light rails would soon become adversely affected under the frequent service and high rates of acceleration and braking contemplated. A further reason for using heavier rails is to provide better negative return.

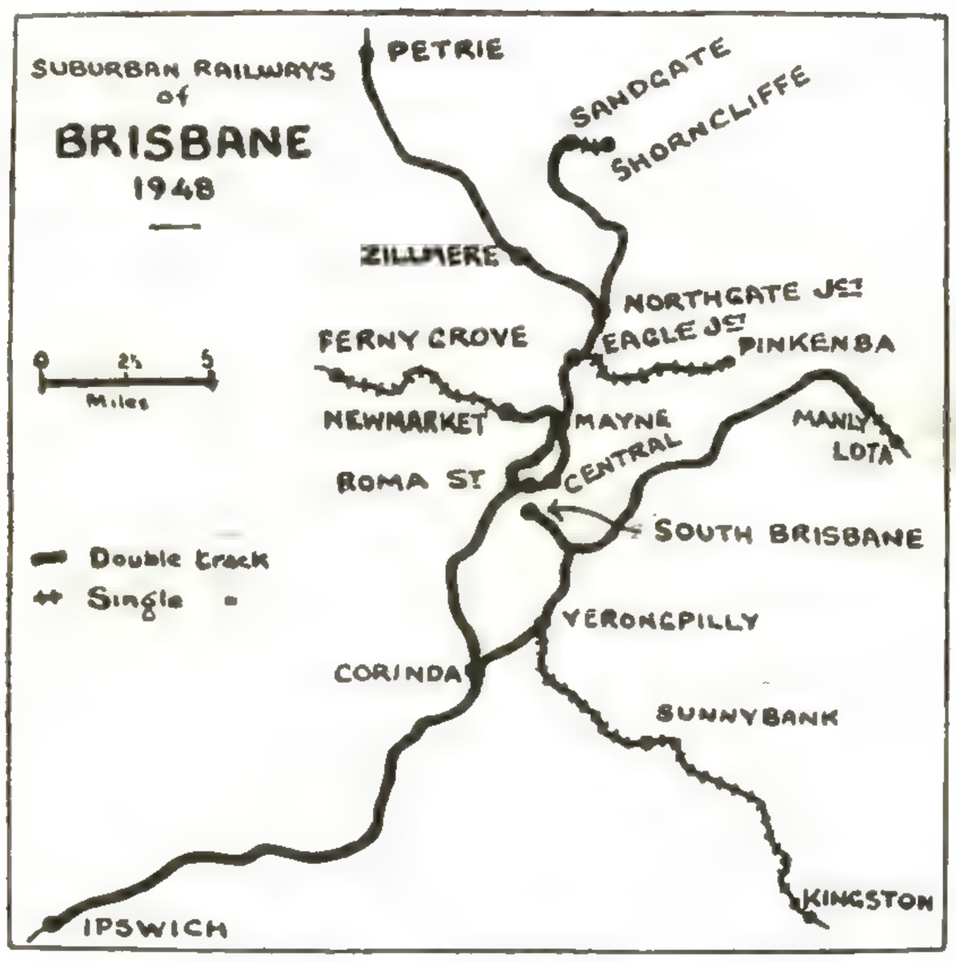
Other important features introduced by the later report include a re-arrangement of Roma Street Station and provision of power signalling on a larger scale than hitherto envisaged, this giving speedier service and more intensive utilisation of rolling stock. The earlier expedient of utilising existing steam rolling stock for electric trailer cars has wisely been dropped and now electric trains will be made up of all-steel equipment exclusively. The cost of new electric rolling stock will be somewhat offset by the fact that 48 steam locomotives would be displaced and of these locomotives some would have passed their economic age, as would many of the existing suburban cars.

To cover future developments of the system, the overhead structures and wiring have been designed to permit of the third track between Corinda and Northgate and of the contemplated duplications between Yeerongpilly-Kuraby, Eagle Junction-Whinstanes, and Newmarket-Mitchelton, also additional tracks required for terminating facilities. In all the total scheme envisages 225 miles of electrified tracks.

In regard to electric stock maintenance, it was first contemplated that shop overhauls would be conducted at the locomotive shops at Ipswich works — following the release of these facilities upon the transfer of steam locomotive work to projected workshops at Redbank. As the Ipswich site is removed from the centre of the system, running inspections and repairs were to be conducted at Mayne. Having this plan in mind, provisions were accordingly made in the earlier report.

When the system of workshops was examined more closely in the light of contemplated future development, it was decided that a more sweeping change would be justified. It is anticipated that by 1955, besides the fleet of 175 electric cars, there will be in operation over 100 air conditioned passenger cars and an unspecified number of diesel-electric locomotives. In all there will be upwards of 300 units of equipment requiring periodical inspection and overhaul of a precise nature. It has now been decided to provide one centralised workshop to handle this work and power signal maintenance as well.

Consequently, electric car maintenance, both light and heavy, will be conducted at workshops to be constructed on the site of the present Mayne locomotive and carriage workshops; the existing facilities to



John C. Beckett
PHOTOGRAPHER

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be transferred to Virginia and Northgate respectively. The site at Mayne is most desirable, being adjacent to the centre of the electric system and capable of being served with alternative routes. For this reason and the fact that the majority of the electric stock will be stabled at Mayne led to the decision to carry out running repairs at Mayne also.

The removal of steam locomotive facilities from the area will ensure that the electric stock is kept clean and that overhauls are conducted in an atmosphere free from grit; cleanliness being essential for such work. In addition it will do much to relieve the smoke nuisance now being experienced in the area.

In view of the high speeds envisaged and the absence of the tell-tale plume of smoke and steam, the level crossing hazard will become more acute, and with this in mind extra protection is planned. At three important locations, viz., Fairfield Road, Yeerongpilly, Campbell Street on the Exhibition line and at Albion, level crossings are to be replaced, in the first two cases by overbridges and by a subway at Albion. As this work is not wholly the responsibility of the Railway Department, an agreement is being negotiated with the Brisbane City Council as to the proportion of cost to be borne by each authority.

As the present arrangement of Roma Street Station is not suitable for electric operation and generally inconvenient for suburban traffic, the platforms nearest Roma Street now used for country traffic will be devoted to electric trains. This will deposit suburban passengers nearer their destination and eliminate the intermingling of country and city travel'ers. Road access will be provided to the new country platforms and parcels facilities established at street level. All country platform tracks will be dead ended at the city end and all steam working eliminated between Roma Street and Brunswick Street stations.

In the £250,000 allotted for Way and Works expenditure the following items are included:—

Alteration to platform awnings, bridges, etc. ..	£60,000
Re-alignment of tracks at stations	£10,000
Lowering tracks and waterproofing tunnels	£30,000
Cleaning ballast at special locations	£60,000
Detailed track survey	£10,000
	£250,000

EXPENDITURE DIRECTLY CHARGEABLE TO ELECTRIFICATION

	£.
175 all-steel multiple unit cars	3,240,500
Power supply and sub-station equipment	1,318,500
Signalling and communications	790,000
Mayne-conversion of locomotive depot to electric car workshops	180,000
Mayne-power signal workshops	15,000
Alterations to way and works	250,000
Level crossing protection	24,000
Portion of cost of three grade separations	70,000
Total:	£5,888,000

EXPENDITURE NOT DIRECTLY CHARGEABLE TO ELECTRIFICATION

	£.
Remodelling Roma Street Station	750,000
Replacing 60 lb. rails with 94 lb. rails	1,028,000
Signalling for third line, Corinda-Northgate	100,000
Refuge sidings for freight trains	40,000
Electric car storage yard at Thomas Street	12,000
Locomotive and car depots—Northgate and Virginia	1,000,000
Mayne—facilities for diesel-electric locomotives and air-conditioned cars ..	35,000
Total:	£2,965,000

Tenders This Year

Messrs. Moffatt and Webster are being engaged to assist Q.G.R. Officers draw up specifications for rolling stock, electrical equipment expected that tenders would be invited in about July, 1950. The work was to be undertaken so that the Ipswich-Shorncliffe and the Pinkenba line would be handled by electric traction in 1955, with the Ferny Grove-Petrie line in operation by 1957 and the whole scheme by 1960.

Because of his intimate connection with several major Q.G.R. projects, including electrification, now in hand the term of the Commissioner of Railways, Mr. T. E. Maloney, has been extended a further two years from March 1st, 1950.

For other electric railway news, see "High Voltage" section.)

LRTL PUBLICATIONS

Sales of these interesting books (see inside front cover) vary considerably, and, as we cannot carry large stocks, we are often temporarily unable to supply customers' requirements.

Additional stocks are ordered by air mail from time to time, however, so that we can usually fill orders within a month or two.

ABOUT ENGINES —

Q.R. GARRATTS DUE SOON
Twelve in First Batch

The first twelve of the order for 30 Beyer Garratts from Beyer Peacock Limited are expected to arrive in Brisbane during the first week of September.

Salient dimensions of these most impressive locomotives are: Wheel arrangement, 4-8-2 2-8-4; Boiler pressure, 200 lb. per sq. in.; Maximum axle load, 9.64 tons; Cylinders (4), 13¾ x 26 in.; Coupled wheels, 51 in. diameter; Grate area, 39 sq. ft.; Coal capacity, 6 tons; Water, 3,800 gallons; Tra ti e effort at 85% boiler pressure, 32,770 lbs.; Total weight, 137 tons; Track gauge, 3 ft. 6 in.

In accordance with the policy of providing more colourful motive power, these locomotives will be painted Midland Red, and will carry the initials "Q.R." on the water tanks. (This is not a usual practice on Australian railways.—Ed.).

4-8-0's Too

The order with the Clyde Engineering Co., Granville, New South Wales, for 20 C17 class 4-8-0 dual purpose engines is expected to be completed by August this year.

TASMANIAN RAILWAYS
New D.E. Locomotives

The first batch of an order for 32 general-purpose diesel-electric locomotives being supplied by the English Electric Co. Ltd., is expected to arrive in Tasmania during the latter part of July. These locomotives are of the end-cabin type, with narrow engine hood.

Diesel-Mechanical Loco.

After examining the tenders received for a diesel-mechanical 350 b.h.p. locomotive required for road-shunting duties, it was decided not to proceed further with the proposal.

Dates in Service

New diesel locomotives were placed in service as follows: V1 in 9/48; V2 in 10/48; V3 in 11/48; V4 in 12/48; F1 in 2/49; F2 in 3/49; F3 in 3/49; F4 in 5/49.

ROLLER BEARINGS FOR V.R. S 300 CLASS LOCOS.

The four S class Pacific-type locomotives of the Victorian Railways are to be provided with fabricated trailing trucks to allow roller bearings to be applied to the trailing axle. These trucks will be similar in general design to those at present employed on X class locomotives Nos. 44 to 55, although the actual dimensions will differ.

Roller bearings could not be used in the existing cast steel truck because of the much larger horn gap required to accommodate the roller bearing boxes. At a later stage, the engine bogies will be similarly replaced by a welded design, also running in roller bearings.

VICTORIAN RAILWAYS
North British Orders

The North British Locomotive Co. are building 50 engines of the N class, and these have been allotted works numbers 26760 to 26809, inclusive, of 1950, with road numbers 450 to 459, inclusive.

The original order for 50 R class passenger locomotives has now been increased to 70 of this type. North British have given works numbers 26989 to 27038, inclusive, to the first 50 of these machines.

NEW "LIGHT LINES" LOCOS FOR V.R.
50 J Class 2-8-0's

Faced with the need for additional motive power to handle seasonal traffic on light branch lines, the Victorian Railways have evolved a new design of locomotive, to be known as the "J" class.

There are several reasons for selecting this design, and they are of sufficient interest to bear placing on record.

In 1921, the present K class light Consolidation was designed to be the branch line locomotive to work in conjunction with and ultimately to replace the D class 4-6-0 in its various forms. The K class has a wheelbase of 50ft. 2in., and to enable turning to be done at outstations, most 50ft. turntables were either lengthened or replaced by 53ft. turntables.

During the mid-twenties, it became Departmental policy that all future rolling stock construction should be confined to types capable of being readily converted to standard gauge. As the K class has a narrow firebox fitted between the frames, it is not suitable for conversion, for the width of the firebox prevents the frames being moved inwards the necessary 6½in. Rather than build more light consolidations, the engine was redesigned with a wide firebox and trailing truck to become the N class and, as such, is convertible to standard gauge.

With the changing of the wheel arrangement to 2-8-2, the wheelbase became 57 ft., so that these machines required a 60 ft. turntable when coupled to the tender. Where only a smaller turntable is available, the tedious procedure of turning by "breaking engine" must be used; the engine and tender are uncoupled, each turned separately, and recoupled, a process which may take up to two hours.

War Emergency Measure

During World War II, the policy of building only convertible locomotives was waived, for a small, versatile locomotive of any description was urgently required. The K class was modernised, and 43 more were built between 1940 and 1946,

for it was found impossible to obtain certain parts, such as trailing trucks and the cast steel frame extension for the N class.

Following the Clapp Report on Gauge Standardisation, it was decided to revert to the policy of having all new construction convertible to standard gauge. This resulted in orders being placed for 70 N class locomotives for light and main line work.

Post-War Problems

Faced with the alternatives of either replacing most 53 ft. turntables to accommodate the N class, or to re-design the K class to be convertible to standard gauge, the Commissioners chose the latter course.

In its new form, this light lines Consolidation is known as the J class. The general design is similar to that of the K's, and as many K class parts as possible will be utilised.

The most radical change lies in pitching the centre line of the boiler 18 in. higher (making it 9 ft. 6 in. from the track), and fitting a new firebox extending over the top of the frame plates. In this way the firebox will not affect gauge conversion. It was planned originally to install the combined steam and sand dome atop the boiler but, as the J's will be stationed at out depots, sanding would involve manhandling — overhead sanding gear is to be installed only at the main depots. As a result, sand boxes will be between the frames, and will have air distributing valves.

The distance between the pony wheel and leading coupled wheel has been increased by 6 in. to allow the cylinders to be provided with freer steam passages, the change making the total wheelbase 50 ft. 8 in.

J Class Features

Other features are German type smoke deflectors, sheet steel cowcatcher (pilot), boxpok drivers, AGET brake equipment with cross compound compressor. The cab floor and tender deck will be raised to keep the height to the firehole consistent with good firing. The total weight of engine and tender in working order is to be 109.7 tons.

Big Order Placed

Although the design is only in the preliminary stages, a £1 million order has been placed for 50 J's with the Vulcan Foundry, Newton-le-Willows, Lancs., England. This has been done to "book space" with the manufacturer to obtain early delivery, for it is expected that the detailed design will be completed and construction commenced by the end of this year, with first deliveries expected by September, 1951.

U class oil-burning 4-6-2 No. 658 of the Western Australian Government Railways, photographed at East Perth by David Burke during September last. These locomotives were built by the North British Co. for war service in the Sudan, but were diverted to the WAGR. Their principal duty is the Australind service, the fastest narrow gauge train in Australia, and the longest non-stop run on the 3 ft. 6 in. gauge in this country.

GEELONG—

(Continued from page 2)

through the suburbs to Newport where running is necessarily slow, and secondly the evening "Flier" from Geelong to Melbourne leaving at 5.8 p.m. and reaching the capital 57 minutes later. The morning train mentioned above continued on to Port Fairy which is 186 miles distant. Both trains are hauled by "A2" class locomotives (4-6-0 type).

An evening train left Melbourne at 5.12 p.m. running non-stop to Geelong and continued to Warrnambool. In the reverse direction a train left Warrnambool early in the morning, departing from Geelong at 11.15 a.m. for Melbourne while an afternoon train left Port Fairy at half past three and, reaching Geelong after dark, made only one stop at Werribee on the continuation of its journey to Melbourne.

There were various other daily trains between Geelong and the capital including an early morning one from Geelong which made two stops only and completed the journey in one hour. One or two trains in "off-loading" periods are worked by petrol electric traction.

It is a rather interesting, historical fact that on 1st December, 1865, the first train of the day for Geelong left Melbourne at 6.30 a.m. and that this departure time remained unaltered for 72 years in spite of all vicissitudes of time tables and railway progress. Some years ago the departure was put forward 10 minutes but now has reverted to the old 1865 time.

During the nineteen thirties the Victorian Railways Commissioners embarked on the project of welding their rails from the 45 ft. lengths supplied by the mills in 225 ft. lengths and with the completion of the Melbourne-Geelong line they possessed one of the finest stretches of railway track in Australia. The new process made train travelling more comfortable and reduced rolling stock maintenance. Two sections of this line between Newport Junction and Laverton were welded into lengths of over 4000 ft. Such lengths as these approach the longest in use on any railway system in the world. For the first time also in Victoria sleeper-plates were provided between the rails and sleepers throughout, affording a substantially improved base for the rail and greater bearing area for the sleeper. Speeds up to 80 miles an hour were attained on the Melbourne-Geelong line on trial runs of Victoria's famous Melbourne-Sydney Express "The Spirit of Progress."

The Melbourne-Geelong line is a single track after leaving the suburban area at Newport, stretching across wide open plains. No heavy grades are encountered as the surface is only slightly undulating.

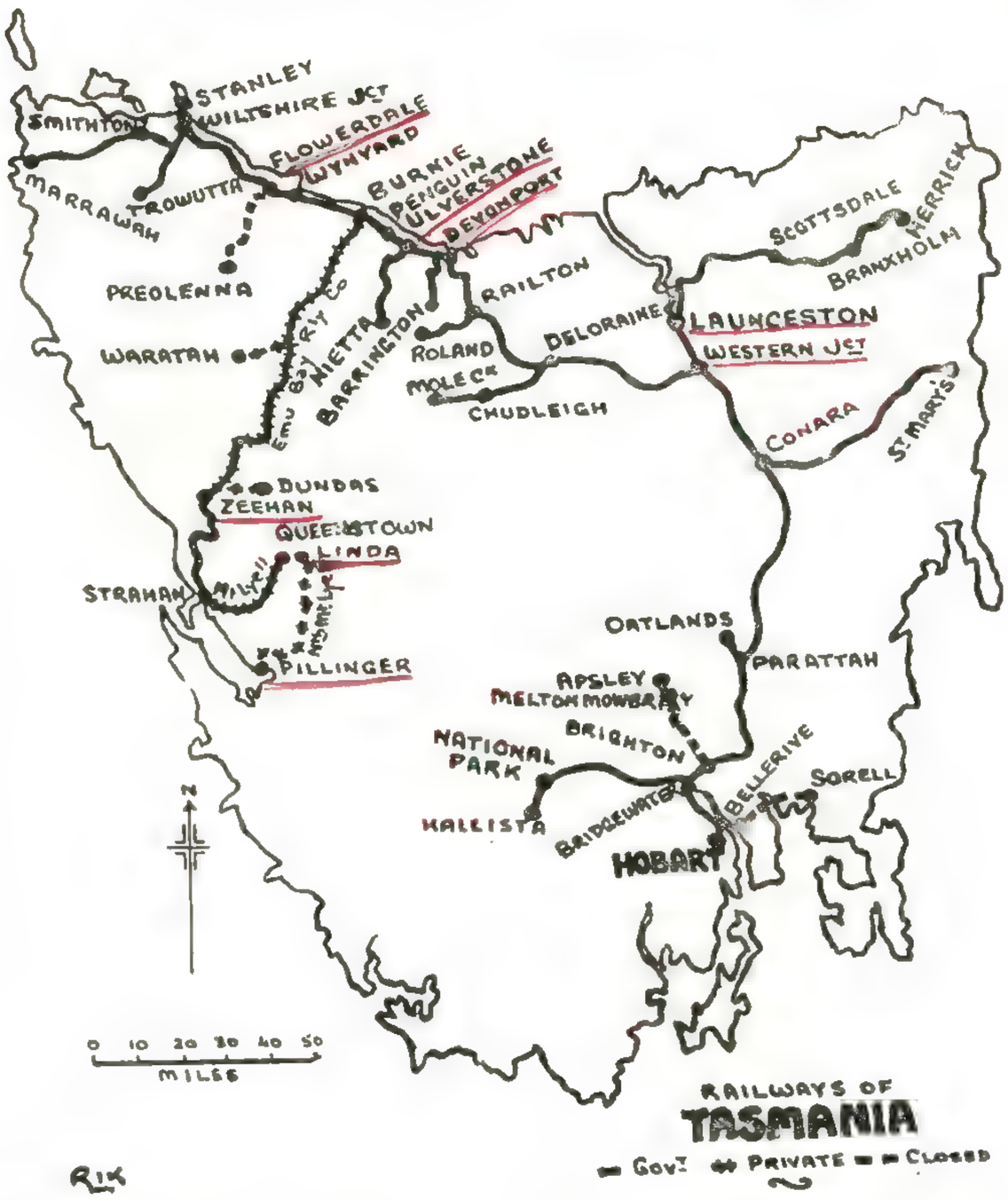
TASMANIAN RAILWAYS

By "Overlander"
(Concluded)

The rolling stock falls into four distinct "types"; first the orignal purely British design of steam locomotives and rolling stock; the more modern Australian-designed steam locomotives, such as the fine "R" class Pacifics and their companion "Q" class 4-8-2's and steel corridor type passenger cars and bogie freight cars; the British steam railcar units of Sentinel type and lastly, the modern diesel railcar units and more recently locomotives. Still another distinct "type" are the special Abt system rack locomotives employed on the Mt. Lyell line.

As already noted, the Tasmanian Railways pioneered the use of Garratt locomotives, and although the two narrow gauge machines were never duplicated on any other railway in their compounding principle, or the arrangement of the cylinders at the inner ends of the engine units, the Tasmanian Railways were very early in the field with more conventional Garratt type locomotives. In 1912, to be precise, two 8-cylinder passenger Garratts of 4-4-2+2-4-4 type and two freight Garratts of 2-6-2+2-6-2 type with four cylinders were introduced for working main line passenger and freight trains. The passenger engines were "ahead of their time" and the use of multiple-cylinder units has never again been allied with the Garratt principle, although in their day they performed some notable feats, including probably the first recorded speed of 60 m.p.h. on the 3 ft. 6 in. gauge. But after an accident at Campania on the main line in 1914, caused by excessive speed, the passenger Garratts were blacklisted and by 1923 their place had been taken by the splendid R class 4-6-2's. The freight Garratts continued to render service intermittently until after the arrival of the first so-called Australian "standard" Garratts in 1944, when they were finally withdrawn. Neither of the original Garratt classes has been broken up, however, and may still be seen standing, albeit forlornly, in the Launceston workshops yard, along with other relics.

Mention must also be made of two abandoned and all but forgotten sections of railway in Tasmania. The first and more notable was the privately-owned and operated North Mount Lyell Railway from Pillinger at the head of Macquarie Harbour to Linda, a town in the vicinity of Queenstown. This line was of 3 ft. 6 in. gauge and 30 miles long, opened for traffic in 1900. With the amalgamation of the two major companies operating on the Mount Lyell ore lode, the line fell into disuse and was dismantled and the equipment sold in 1928. Two of its three engines are still working on the Emu Bay Co.'s line. To-day, probably little trace remains of this early enterprise. The other abandoned line is the Preolenna Branch of the T.G.R. which left the Western line at Flowerdale Junction, near Wynyard. It was under twenty miles long and was dismantled in April, 1939, after having been disused for most of the period of its existence.



automatic single line signalling operates throughout from Newport to North Geelong where, for the last few miles, the line becomes double again.

It possesses one feature of operation that is understood to be unique in Australasia and this is the "running crossing" of two trains travelling in opposite directions. The times of arrival at each end of a long loop are synchronised. The writer was an interested observer of the procedure when travelling once on the "up Flier" from Geelong. On approaching Werribee the train slackened speed and was switched on to the loop and continued on its way. Meanwhile the "down Flier" was approaching at full speed on the main line. By the time the "up" and "down" trains had passed each other and reached the opposite ends of the loop the points had been re-set. Thus no time was lost in "holding" one train in a siding while the other passed it on a single track.

(To be continued)

VICTORIAN ITEMS

New Station

Tenders are being invited for the construction of new station buildings at Broadford.

More Pulverised Fuel Cars

To increase the range of the pulverised brown coal firing tests, five more CK class fuel transport trucks are to be constructed at Newport Workshops, making a total of seven vehicles in the class. These trucks will be engaged in the transport of pulverised brown coal from Yallourn to North Melbourne locomotive depot. At North Melbourne, overhead hoppers will be installed for fuelling the two STUG-equipped locomotives.

Big Hook for Imported Locos.

A crane of 100-ton capacity has been imported by Messrs. John Sanderson and Co. from England and erected on the Nelson Pier, Williamstown to unload the 120 new locomotives now under construction in Great Britain for the Victorian Railways. John Sanderson and Co. are the agents for the Blue Star Line and the Blue Funnel Line and, on 16th June, the first two N class locomotives (2-8-2 type) left Britain aboard the "Empire Star." Four more locomotives are to be shipped on the "Stentor" early in July; in both cases, the locomotives will be carried as deck cargo. Upon arrival in Melbourne, the locomotives will be taken to the Newport Workshops for testing and final inspection.

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COUNTERBALANCING LOCO. DRIVERS

Some Recent American Views

(Adapted from "Railroad Magazine")

In this day of supersonic speeds, 100 miles per hour is commonplace, but this is the approximate limit of a steam locomotive. If speed is increased much beyond this point, the main wheels leave the rails during a portion of each revolution and, on dropping back, strike them a damaging hammer blow.

This action is commonly known as "kinking." After a locomotive has kinked the rails the railroad mechanical engineers are often called on to investigate whether the damage is caused by excessive speed or improper counter-balancing of the engine wheels. If it were possible to design a steam locomotive of conventional type that would not damage the track at 200 m.p.h., such a machine would be able to hold its own against the Diesel and run as smoothly at ordinary speeds. The same forces that damage the rails at excessive velocities also act at slower speeds, though they do less damage to track and machinery.

The pounding action of a steam engine on track was brought forcibly to the attention of the writer while visiting some friends who live in an upstairs apartment of a suburban home about 600 feet from the Texas & Pacific line in El Paso, Texas. When a Diesel passed, we knew it only by the blast of the horn; but when a steam engine went by, especially one accelerating at high speed, the house vibrated as though jarred by an earthquake.

Locomotive counterbalancing has had the attention of the best engineers for over a hundred years and is still an open question, for no one has been able to smooth out the operation of a conventional locomotive to make it run as fast as a racing car.

Engine 999 on the New York Central is said to have pulled a train a mile at 112 m.p.h. in 1893, a record unbroken for 10 years. Those old time speed records were hung up by light American-type high wheelers with Stephenson valve gear. Some of these locomotives were inside connected; that is, the cylinders and main rods were between the frames and the main axle was shaped something like an automobile crankshaft. The light spoke-type wheels and thin tyres of these old-timers improved their gyrodynamic characteristics. Stephenson valve gear gives increased lead at short cut-off, and reduces "nosing." Such engines would naturally be easier on track than to-day's giants.

If one asks a mechanical engineer why the reciprocating and revolving parts of a locomotive cannot be perfectly balanced so that speeds in excess of 100 m.p.h. may be attained on straight track, he will probably reply "because of the overbalance." The overbalance is the weight added to the counterweight to partly balance the reciprocating parts of an engine; namely, the piston, crosshead and front end of the main rod. This overbalance acts to partly balance the reciprocating parts as they reverse their direction of motion at front and rear dead centre. At top and bottom quarter positions the wheel is overbalanced and the centrifugal force of the overbalance is a factor in causing the wheel to pound the track. In stationary steam engines from one-half to two-thirds of the reciprocating weight is balanced, but in locomotives the amount of overbalance has been gradually reduced, and at present only about one-third of the reciprocating weight is taken care of (in addition to all the revolving weight) and this overbalance is divided equally among all the driving wheels. The result is that there is about 200 pounds overbalance in each wheel. Calculations show that the centrifugal force of the overbalance at 100 miles an hour is only about one-third of the static weight on the wheel. Obviously there must be some force not previously understood that causes the main wheels to leave the rails.

The action of locomotive driving wheels at high speed has been investigated carefully both on the road and on the "slipping track," a stretch of track oiled so that the drivers spin at high speed while the engine moves slowly along. Slow motion pictures show the main wheel an inch or more off the rail, sometimes when the counterbalance is up and less frequently when it is down. Damage to the track is usually confined to the right side, and in the case of engines running on the road often occurs at the bottom of descending grades. Locomotives have also been observed to bear to the left. This may be verified by anyone who has access to a locomotive roundhouse or shop by comparing the wear of the spring hangers on the frame on opposite sides of various engines of all classes.

The writer noted that during a period of about ten years when engines were tested on a slipping track most of the tyres that worked loose were on the right side of the engines. After puzzling over these curious facts for a number of years the correct solution of the problems was finally discovered. It explains these various locomotive mysteries and fits in like the missing piece of a jigsaw puzzle.

The explanation lies in the gyroscopic action of the driving wheels. Few people understand the peculiar action of the gyroscope, although the various instruments based on its action are fairly well-known, including the gyro-compass and the bank-and-turn indicator used on airplanes. Every wheel that turns has gyroscopic properties, and the familiar gyroscope toy top is only a wheel arranged to show them. The peculiar property of a gyroscope or other rapidly rotating mass, called precession, is an important factor to be considered in connection with counterbalancing. If a force is applied to a rapidly rotating wheel that tends to change the angle of the axis of rotation, the wheel does not respond in the direction of the applied force but turns about a third axis, at a point 90

(Continued on page 12)

Higher Speeds on New Line

The 25 m.p.h. speed limit on the new line (to be the future Up line) between Drouin and Warragul (Gippsland), to allow settlement of the high banks, has now been increased to a limit of 40 m.p.h., subject to a restriction of 25 m.p.h. between Warragul and mileage 60.75, on account of new crossing work being installed.

New Timetable for N.E.

A new working timetable was issued for the North-Eastern District to take effect from 10th July.

More Walker Diesel Cars

A further nine 153 h.p. Walker diesel railcars have been ordered. This will make a fleet of fifteen such cars; the new batch has been allotted road numbers 26 RM to 34 RM, inclusive.

TASMANIA

Scottsdale Branch Stays

It was the intention of the Transport Commissioner to acquire and operate the private coach line between Launceston and Scottsdale and then withdraw the present railmotor service on the Scottsdale branch. However, as this proposal was rejected by the Legislative Council, an assurance has been given by the Commissioner that an adequate rail service will be provided.

Diesel Maintenance

To report on a suitable system of diesel locomotive maintenance and overhaul for the Tasmanian Railways, two assistant engineers from the Launceston workshops, Messrs. C. Smith and S. Merry, are to visit England.

P.C.C. — or B.C.C.?

There comes a time in the lives of men, of organised bodies, and of whole nations, when progress tends to cease, when change comes to be regarded with suspicion, and the tendency is to seek inspiration in the past, rather than in the future. How many of us remember the fiery utterances of a generation past by politicians now assailed for their conservatism or timidity? The empires of Rome, of China perished not so much from the assaults of barbarians, but from the decay of their own essential spirit.

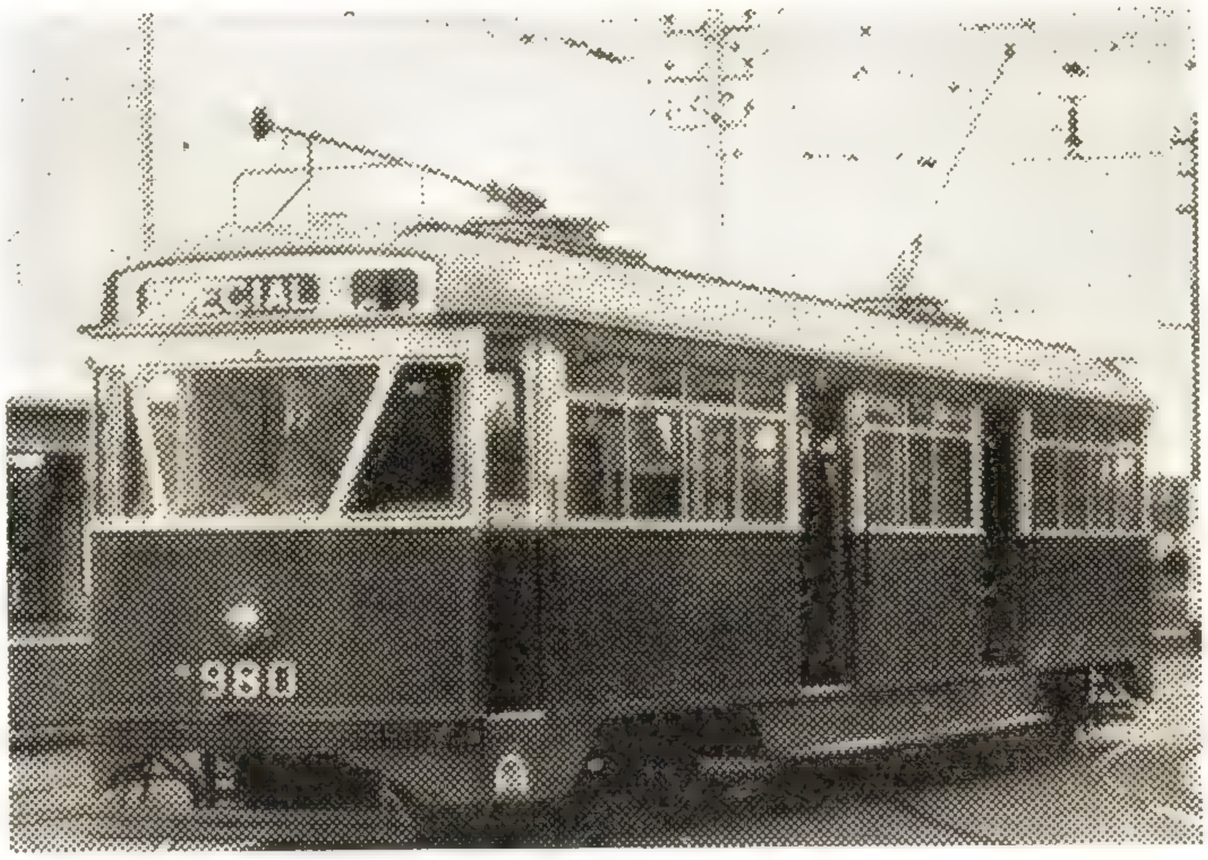
These things are found the world over. Peculiar to Australia, or allegedly so, is the tendency to fall short of perfection in the introduction of something new. Australians are sensitive to criticism on this score, but the writer remembers how often, during the late war, new methods or equipment were introduced from Britain or America, only to be wasted through failure to accept them completely. "This is good enough," and "We couldn't possibly afford to do that" might well have been the mottoes of our dockyards and arsenals.

Such an approach, unfortunately, seems to have been made in many quarters to the introduction of modern tramway equipment of a new and revolutionary design.

Just over ten years ago the then Chairman, Mr. H. H. Bell, announced that the Melbourne and Metropolitan Tramways Board had acquired the Australian rights for the P.C.C. car, then attracting considerable notice in America. It was planned to import a complete car, preparatory to constructing a fleet of similar vehicles for Melbourne, and Mr. Bell anticipated that the Board's shops would ultimately construct such cars for other Australian systems. The war and the subsequent dollar shortage prevented implementation of these plans and eventually only a set of trucks and electrical gear were purchased in the U.S.A.

An experimental car — largely a modified SW 6 body — was built and trials are now being run which have astounded those who had no previous experience of P.C.C. operation. The 80% noise elimination alone is worthy of acclaim.

So far, so good, but we are now told that it will be many years before a fleet of such cars is built — if ever they are built. "Too costly!" is the cry — heeding

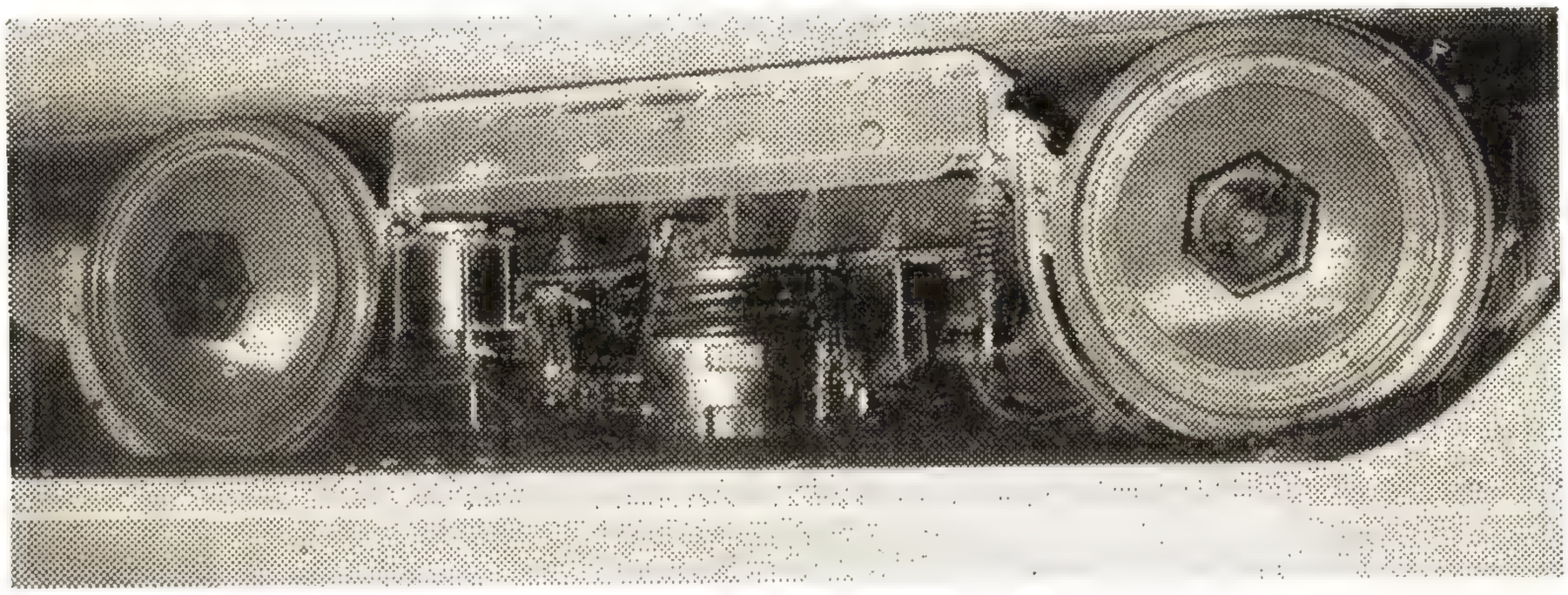


nothing of reduction of wear and tear on tracks and special work and many other indirect savings. "Too complicated" cry the maintenance men (would they prefer a crystal set to a dual-wave radiogram for the same reason?).

Many transport men insist that resilient wheels alone provide the answer, in conjunction with standard cars. The Brisbane City Council has adopted this policy, with results that are pleasing — 40% noise elimination is claimed — but which hardly bear comparison with the P.C.C.

Before No. 980 actually ran, there were those who claimed that the acceleration and braking rates were unsafe — passengers would be thrown headlong, and much more in this strain. We invariably pointed out, in answer to such talk, that hard-headed American businessmen and engineers would scarcely have spent $1 million in research (this was before a single P.C.C. ran and the development of refinements still goes on) and placed nearly 5000 cars on the road without considering thoroughly every problem involved and the

(Continued on page 13)



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Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

LAST NEWCASTLE TRAM

LP class No. 147 about to leave Telford Street for Hamilton Depot in the wee sma' hours of Sunday, 11th June last. Most of the passengers were AETA members, the public farewell having occurred on the last trip right through to Waratah. (Noel Reed photo.)

AUSTRALIA'S FIRST PCC EQUIPPED TRAM

Melbourne—Victoria:—

Successful official trial runs of car No. 980 were accomplished on 10/7/50, with representatives of the Tramway Board and the Press. This car, which is equipped with PCC trucks and control equipment, is the first major advance in Melbourne since the "SW 6" cars were introduced in 1939. The body of 980 is a modified SW 6 type, with an improved front incorporating a built-in route number box. The floor, instead of the ubiquitous Melbourne "drop-centre," is straight-silled, and an extra step has been provided, built-in behind the two centre sliding doors. The trial runs showed the large reduction of noise, and swift acceleration characteristic of the equipment. The car will enter public service in August, operating on Route 69 (Kew — St. Kilda Beach). Another feature of the car is that the centre seats are longitudinal, and are upholstered in a similar material to the rest of the seats in the car. A standard headlight has replaced the "front-canopy" lights typical of the SW 6.

NOTED TRAMWAY ENGINEER MAY RESIGN

Adelaide—South Australia:—

Sir William Goodman, Chief Engineer and General Manager of the M.T.T. since 1907, may retire at the end of the year, when the assistant to the Assistant Chief Engineer (Mr. H. M. Walkington) and the Trust Secretary (Mr. J. N. Keynes), return from an inspection of overseas transport systems. Sir William has done more than anyone in the planning and extension of Adelaide transport. His most important work was the electrification of the various private horse tramways which the Trust acquired in 1906, a job which involved much replanning of routes and subsequent relocations. The Glenelg inter-urban line and its famous "BAY" cars is another of Sir William's works. Since 1900, there has always been a wide demand for Sir William's opinions on various transport problems, and prior to his Adelaide appointment he held several important engineering positions in other systems. He is recognised as Australia's leading transport authority, particularly on trams.

NEWCASTLE TRAMS FINISH

Newcastle, N.S.W.:—

Newcastle became an all-bus city as from 11/6/1950 after 63 years of tramway operation. The steam trams commenced in 1887 and by 1916 had extended for 34 miles including inter-urban routes to West Wallsend and Speer's Point. Between 1923 and 1926, 24 miles were electrified and the remainder closed in 1930. The first electric closure came in 1938 and the rest of the services ceased between 1948 and 1950. The last route, City-Waratah, carried the "graveyard" run, with L/P 147. All remaining trams will be scrapped locally.

Brisbane—Qld.:—

The latest tram on the road is 508 of the streamlined "400" class, soon after 507, the latter entering service on the 3rd July. Car 508 is so far not equipped with resilient wheels. Cars 497, 498, 499, 505, 506 and 507 are the only cars so far that run on resilient wheels. Eventually all of the 400 type will be fitted with them. A new feature introduced with 507 is asphalt tiled flooring. It is thought that this type will be better wearing, and easier to replace than the standard type in use. The City Council Stores' Board has recommended the importation of 200 tons of steel for a further 30 new tramcars. The Mt. Gravatt extension from Holland Park is under construction, the distance being 1¾ miles and is costing £64,000. Duplication of the existing route has been carried out to the present terminus.

On July 1st, increased fares came into operation on trams and buses. The main feature is the increase of 1d. after 6.30 p.m., except on 2d. fares. Concession tickets cannot now be used after the same time.

The City Council Transport Committee has made recommendations to eliminate several tram stops in the city streets of Adelaide, Queen and George. This move coupled with the provision of new safety zones is expected to speed up tram traffic between Fortitude Valley and North Quay. Better load distribution is expected also, and if the plan is adopted, it will be given a trial for one month.

Sydney—N.S.W.:—

Duplication has been approved for the single line section, Signal Station-Park Loop on the recently restored Watson's Bay line. The Woollahra Council will supply the labour, and the department the rails (secondhand) and the overseers. Augmented departmental bus services in the Watson's Bay area have enabled the restored tram services to operate right through to Erskine Street and Clarence Street in the City, says a statement by the Transport Commissioner. Following a recent State election, and a reshuffle of Cabinet posts, Mr. W. F. Sheahan has replaced Mr. M. O'Sullivan as Transport Minister.

The "noiseless" tram (RI class 1958) has evoked much praise from the travelling public. It is equipped with trucks obtained from Brisbane, which have incorporated rubber inserts.

Alterations have been made to certain Sunday timetables, effective from 2/7/50. Lines affected by a reduced headway are City to Glebe, Earlwood, Canterbury and Dulwich Hill to Cook's River. The Sunday bus service (Route 070) from Chatswood to Wynyard has ceased and the trams have been restored, but on a reduced headway.

Much reshuffling of trams between depots has been going on, and the most significant change is the withdrawal of five "R" cars from the North Sydney system, and their replacement by several of the older "O" class. It is suggested that the 50 odd "R" cars will be gradually withdrawn from Nth. Sydney as they come due for overhaul at Randwick Workshops.

Melbourne—Victoria:—

It has been decided to transfer to

the isolated Footscray system for a short period, No. 2 Reciprocating-Grinder. This is the first time since the inception of the Footscray routes, that a Grinder has been in use. No. 8 Scrubber has recently returned from Footscray to the main system.

Recently outshopped from Preston Workshops are SW 6 cars 955-959, making 110 in service, of this class. Trial runs of "PCC" class car 980 were conducted during the first week of July. It is understood that all SW 6 cars from 970 onwards will revert to the standard front headlight, instead of the "front-canopy" lighting characteristic of that class. About 10 W 2 cars, one W 3 and one W 5 are equipped with front-canopy lighting, the principal feature of which is to illuminate advertisements and exhortations to passengers.

The "All-Night" tram service will be increased to nearly normal from August. The serious two-months strike had affected the staff situation, and for the past few months the service has been only a 75 minute one on nine routes. From August, an hourly service will service all regular all-night routes.

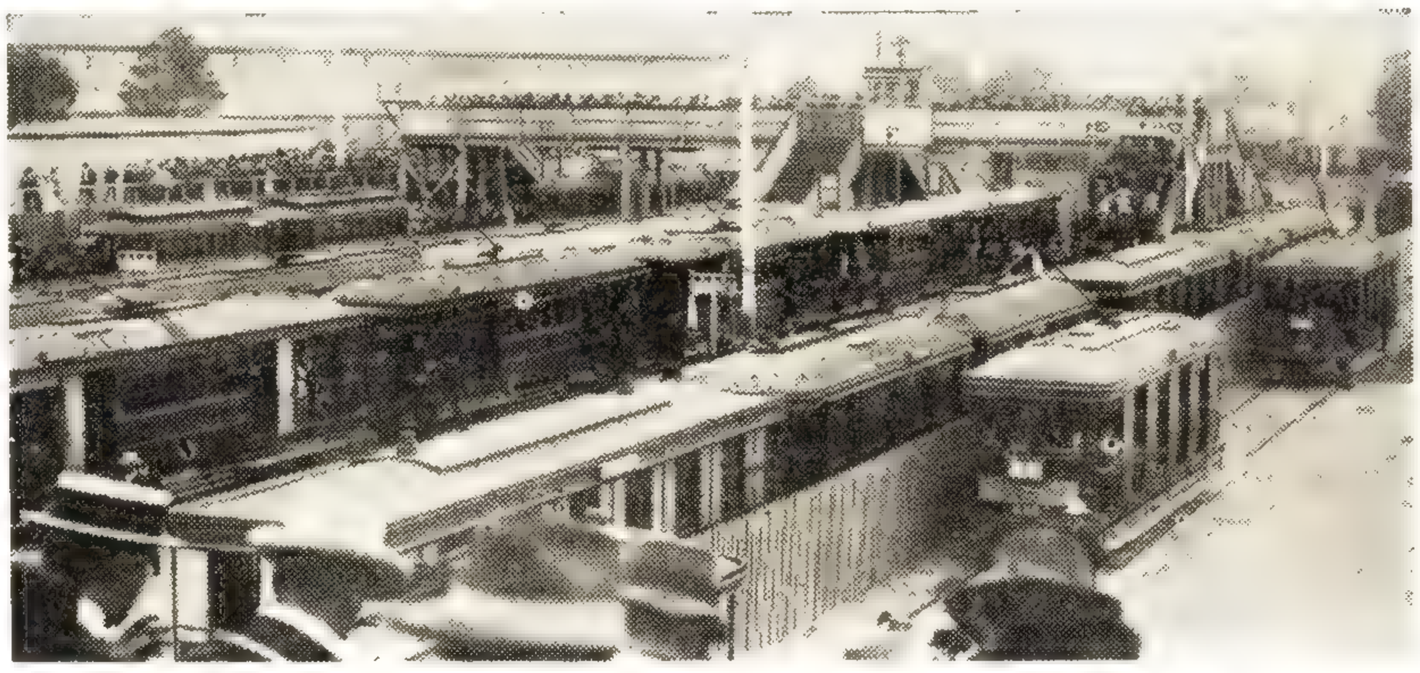
Although very near completion, staff difficulties still hold up the Latrobe Street city diversion. The latest date for the opening is September. The recent change of Government has seen the appointment of a new Minister of Transport —Mr. Hyland—a Parliamentarian of long standing noted for his balanced views. So far, the new Government has not intimated its policy on Transport Co-ordination, consequently, the plans made by the previous Government for a unified Transport Authority may be changed. On the result of this matter hinges the fate of the two V.R. tramways and the three country services operated by the S.E.C.

Perth—W.A.:—

The first major abandonment of the doomed South Perth lines took place on 11/6/1950, when the line from Causeway Junction to Como (3 7/8 miles) together with a branch to Mends Street Jetty (50 chns.), was taken over by the Departmental buses. This line, notorious for its single track, was opened by the W.A.G.T. on 28/10/1922, the total length of route, including the branch being 4 miles 44 chains. The line to Como was operated by a through service from the City (Route 28), with intermediate workings to Zoo (Route 26), and Tate Street (Route 27). The branch, whose junction was "trailing" for outbound trams, was serviced by a local shuttle service from Como terminus, and cars connected with Government ferries at the Jetty. At the Zoo, where the branch diverged, a triangle junction existed. "B" class car No. 3 was noted as the last operator of the shuttle. From Causeway Junction there were six loops, and this made the run very inflexible at busy periods. The Como terminus was six miles from the City. The sole remaining route over the Causeway, that is, the predominately double track line to Victoria Park is expected to close about August. "B" class cars noted in service last December were 3, 11-19, 21-24, 26-29, 41-44, 46-52, 77-89, a total of 42. These cars are gradually being scrapped. They are a 29 ft. saloon S.T. car, the first group being built by the old P.E.T. Ltd. in 1899. A late dispatch quotes the Minister of Transport (Mr. Simpson) as stating that the Mayland tramline will be bustituted as soon as vehicles are available.

NEW ZEALAND NEWS

The Oriental Bay branch from the city ceased after 40 years of operation in May and trolleybuses, extended on to Hataitai have taken over. The abandoned line was just over a mile in length. There is no news yet to hand as to the future policy of the Christchurch Tramway Board. It will be remembered that citizens have been bickering over the planned bustitution scheme which has not met with general approval. So far, the Fendalton-City-Opawa service has been closed since the new Board took office. These lines were opened at the end of the last century



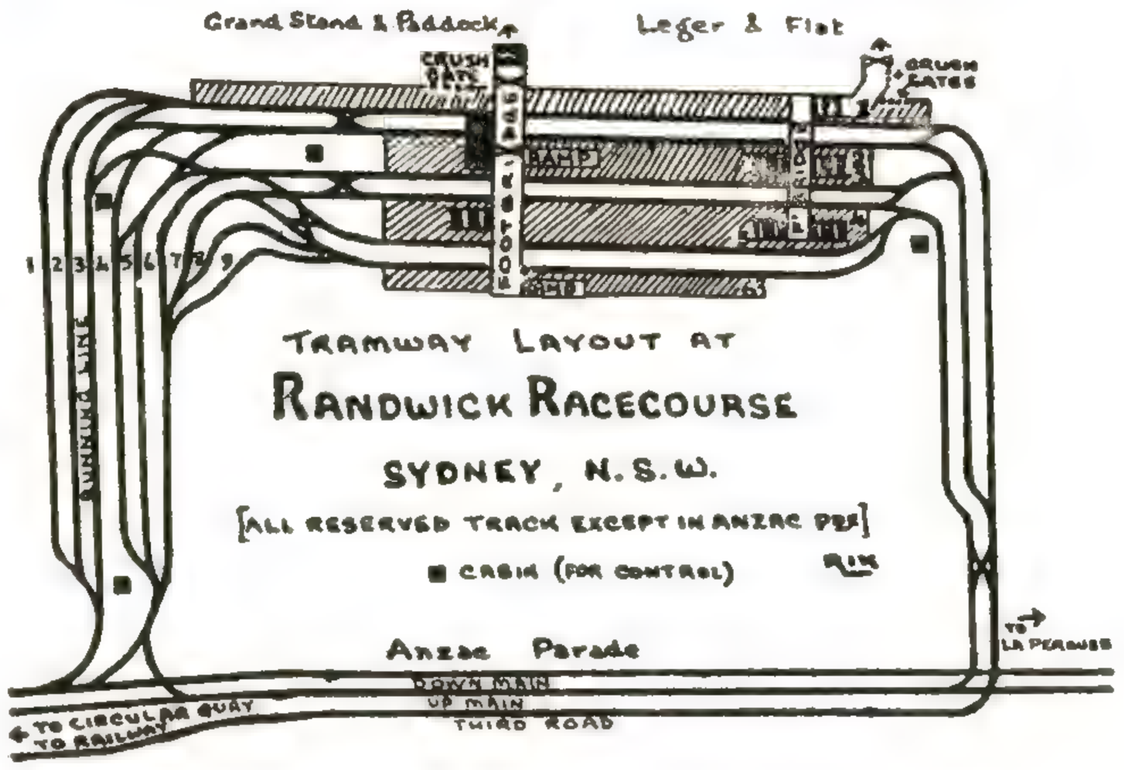
INTERESTING TRAMWAY LAYOUTS

II. Randwick Racecourse

Not the least of Sydney's remarkable tramway track lay-out is found in the terminal arrangements provided at that city's principal racecourse at Randwick. By means of the extensive railway-type track and platform facilities, 1200 passengers per minute can be lifted with ease — as many as could be handled by suburban electric trains (which will ultimately serve Randwick in the later stages of the Eastern Suburbs Railway Scheme).

Although taken some forty years ago, the official photograph used in our illustration (by courtesy of Mr. C. R. G. Field) shows clearly the six platforms and the smaller of the two overbridges.

At that time, particular classes of cars were confined to each track, those visible being (1) C and C trailer, (2) O, (3) N—roofs visible only, (4) F and L, (5) E, with ex-steam trailers, (6) J. At that time, cars were run direct to various suburban termini; now all run either to Railway Square or Circular Quay.



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THE TROLLEY-BUS STOP

NEW ZEALAND TROLLEYBUSES
Big Metro-Vick. Orders

No fewer than 190 trolleybus equipments have been supplied or are on order from the Metropolitan-Vickers Electrical Co. Limited, Manchester, England, for the transport systems at Auckland, Dunedin, New Plymouth and Wellington, New Zealand.

The latest order is for a further 48 such equipments for Dunedin, making a total of 79 for that city.

with steam traction and were later electrified. The only other route closures to date have been many years ago — the North Beach service going to trolleybus as early as 1932, and the St. Martin's branch in the south a few years later to buses. It is expected that the Wanganui system will close within a few weeks, and the Invercargill lines later this year. The first closure of the Dunedin system in favour of trolleybuses is expected in a few months, the Gardens and Opoho service being in question.

OVERSEAS NOTES

In England, the progressive Leeds Corporation will purchase 95 "Feltham" cars from London. These cars, built in 1932, are the most modern of the London fleet and are classed "U.C.C." The final conversion of London's remaining tramways will commence soon. Toronto (Canada), has ordered another 50 PCC cars. This will bring the city's total to 539. All of the 50 streamlined silent bogie cars for Madrid (Spain) are in service. They have been built by C.G.E.-Fiat Co. in Italy, and incorporate many PCC features. We chronicle new modern trams being built for the European cities of Prague and Budapest.

Cont. from Page 8

degrees from the applied force. A boy guiding his rolling hoop is an example. If he wants the hoop to turn to the right, he presses to the right on the side of his hoop at the top. Should he press on the side of the hoop at the front or back portion, the hoop would fall over. In either case the hoop precesses. The heavy wheels of a locomotive may be likened to a number of hoops, and the force that tends to change the angle of rotation is the nosing of the engine that originates in the power impulses. The result is that as the engine noses or wobbles sideways, the wheels get a gyroscopic or precessional impulse up or down.

This is the mysterious force that jerks the main drivers up off the rail and slams them down with a blow like a pile driver. The heaviest pair of main wheels weigh about fifteen tons and the side rods and back end of the main rod are also revolving weight. The gyroscopic or precessional forces resulting from the nosing or wobbling of the engine are large. Just how much an engine noses is difficult to determine. There have been cases where the fireman has been thrown out of the cab. Locomotive drivers are allowed to run until the lateral reaches three-quarters of an inch. A large engine has a three-eighths of an inch lateral when new or refitted. The flange clearance is a quarter of an inch or more on each side, and the rail springs sideways under flange thrusts, probably more than supposed.

The fact that rails are kinked more frequently by the right main wheel than by the left one is due to the right lead construction of the engine. On most American locomotives the right pins run 90 degrees ahead of the left. The nosing occurs each time either crankpin passes dead centre, and due to the right lead construction the right main wheel gets a precessional impulse down when the counterweight is down, and the left main wheel gets a precessional impulse down when the counterweight is up. As a result of this, the pounding action of the overbalance on the rail is added to the precessional force on the right side of the engine, while on the left side the centrifugal pound of the overbalance and the precessional or gyroscopic impulse are in opposite directions and tend to cancel each other. This explains why the right rail gets the worst beating and why the right side of the engine vibrates vertically more than the left, tending to crowd the engine to the left.

One might well ask why these peculiarities of the steam locomotive have not been noted in the numerous scientific tests made on locomotives in connection with counterbalancing. The answer is they have, but heretofore no explanation has been offered. In reporting some extensive tests made by the Association of American Railroads, the May, 1945 issue of the *Railway Mechanical Engineer* mentions on page 199 the tendency of the leading and trailer trucks to bear to the left. The tendency of the right rail to be damaged is noted on page 254 of *The Steam Locomotive*, an authoritative book by the chief engineer of the Baldwin Locomotive Works.

Now that the cause of the trouble is understood it is possible to suggest remedial measures. Light-weight rods are a step in the right direction that has already been taken. Light-weight wheels and thinner tyres on the drivers would greatly improve the gyrodynamic characteristics of these parts. Locomotive rods have been made from aluminium alloy and wheels could be constructed of the same material. It is possible to construct a non-precessing counterweight having some free motion sideways so its plane of rotation will not change its angle when the engine noses or wobbles. The spider web spokes of the high wheelers of our grandfather's day had better gyrodynamic characteristics than the heavy disc wheel used now. A method of testing counterbalancing sometimes used in those times was to place a bucket of water on the front end and run the engine at speed, adjusting the counterweights until the least amount of water was spilled. What sort of a job would an airplane designer do in building a steam locomotive?

—H. W. Stowell.

AN AUSTRALIAN TRACTION PIONEER

Francis Edwin Bradford

By "Annett Lock"

Francis Bradford, best known for his planning of the St. Kilda-Brighton tramway in Melbourne, started his electric traction experience in America. Graduating with degrees of Bachelor of Science in Mechanical & Electric Engineering, he started work with Westinghouse in 1890, and saw many of the early installations of electric trams. Later, he worked with a group of large tramway promoters, and had experience with car design and powerhouse construction in Cincinati, Ottawa, Washington, Baltimore and many large cities. In 1900, now as a Consulting Engineer, he visited leading English and Continental installations for experience.

His first appointment "down under" was in Dunedin, N.Z., in 1903-4, to give advice on the electric fication of the horse tramway service. In 1904 he first entered Australia and was appointed by the Fremantle (W.A.) municipality to design a new electric tramway system. This 3ft. 6 in. gauge installation was opened in June, 1905, but by that time, Mr. Bradford had left W.A., for late in 1904 he gave technical advice to the South Australian Government on the electrification of Adelaide's suburban railways, a project that never materialised, at least, not by 1950!

In 1905, the Victorian Government passed an Act authorising the construction of the first Government tramway in the State, from St. Kilda to Brighton in Melbourne's southern suburbs. With control of the line to be vested in the Victorian Railways, the Cabinet appointed Mr. Bradford in February, 1905, to design, superintend the construction of, and to manage the completed route of four miles. With only £19,000 available, and this to include a power house, the task was extraordinarily difficult, particularly as high railway officials, including the Chief Commissioner (Thomas Tait), had publ y expressed doubts as to the future of the line, and tended to obstruct Mr. Bradford in many ways.

But with the encouragement of the Premier, Thomas Bent, the job was completed in May, 1906, and the result was the most up-to-date piece of tramway construction in the land; the California type Combination cars, designed by Mr. Bradford, were very favourably commented upon.

During 1905, whilst engaged on the construction, Mr. Bradford prepared, for the Government, plans for the construction of 20¼ miles of Government tramways in Melbourne, together with the electrification of the St. Kilda railway (3½ miles). These were reported on by the Parliamentary Standing Committee. However, the undisguised hostility shown by Commissioner Tait to the plans was one reason why they were rejected as a whole, with only one likely to show any financial result. The fact that four of these routes were built by municipal enterprise within a few years shows the accuracy of Mr. Bradford's plans and future forecasts.

The one-mile extension of the designed by Mr. Bradford. The tramway in December, 1906 was also tramway was an immediate success, and profitable, too, a fact that did not improve relations between the Manager and the Commissioner! More cars were obtained and trailers operated to carry the loading at rush periods. The St. Kilda Cable tramway suffered much as the Brighton trams took their loads to St. Kilda Station.

Tragedy came early, and on 7/3/1907, a fire burnt the car shed and destroyed the trams. But in only ten days, Mr. Bradford had obtained seven trams from Sydney, placed them on rejuvenated, fire-damaged trucks, and had them running a normal service. Immediately he designed the new car shed, plus an additional one for the extra cars which were built to replace the burnt vehicles.

The fire not only affected the trams, it affected their Manager, and for some months Mr. Bradford suffered from an incipient breakdown. No longer a strict and efficient supervisor, car maintenance, track repairs, and discipline slipped. The power generation became faulty, train connections were missed at St. Kilda, and accounting records became inaccurate. The result was a suitable opportunity for the Commissioner to dismiss the Manager, and to add insult to injury, Commissioner Tait was instrumental in getting a Government Inquiry appointed to look into Mr. Bradford's management after the fire.

Twenty-nine official complaints were laid by Mr. Stone, an old opponent of the line. From the beginning of 1908 the Inquiry heard many witnesses. A brilliant self-defence was made by Mr. Bradford, encouraged by the loyalty of the tram crews who had stuck by him. Seven charges only were proved, but these were the major ones, and the dismissal was not revoked. His place was taken by Mr. Holmes, and as his assistant Mr. Stone was appointed.

We know no more of Frank Bradford, but we give hearty thanks for a man who persisted with the Brighton tramway amid much opposition, and to-day, with a spotless reputation of time-keeping, car maintenance, and courtesy of the tram crews, the "ST. KILDA-BRIGHTON ELECTRIC STREET RAILWAY" stands as a living monument to the courage of an enthusiastic traction pioneer.

(Continued from page 9)

financial results to be expected.

The best answer lies in the fact that P.C C.'s continue to be ordered in large numbers, despite the constant whittling down of tramways by high-pressure vested interests and despite their high initial costs. They have been adopted in several countries outside the U.S.A., and only dollar shortages prevent their more rapid introduction.

Why, then, should we in Australia feel that anything less than the real thing should be good enough for us?

Even No. 980, the experimental car, falls short of true P.C.C. standards, lacking as it does the sound-proofed body and air-conditioned interior of the American car, to say nothing of the more primitive seating arrangements and the addition of an air-compressor, long-since discarded in the P.C.C. design.

Let us have the best, and plenty of it, with no hesitating or half-measures!

MELBOURNE TRANSPORT

The average passenger seating capacity of Melbourne trams is 49.76. This figure was given erroneously (through a typographical error) in our May editorial as 47.76.

SUBSCRIPTION RATES

To "Railways in Australia"

As from 1st January next, ALL subscriptions—new or renewal—other than those for AETA members or those arranged through ERA Headquarters, will be as follows:—

AUSTRALIA: 15/- yearly.

STERLING COUNTRIES: 12/- stg. yearly.

DOLLAR COUNTRIES: $2 yearly.

At the present time various rates apply, but a survey has shown that the journal cannot be made to pay at less than the 15/- rate. Certain reciprocal arrangements exist with the AETA and the ERA, and members of those bodies should enquire from their headquarters for details if required.

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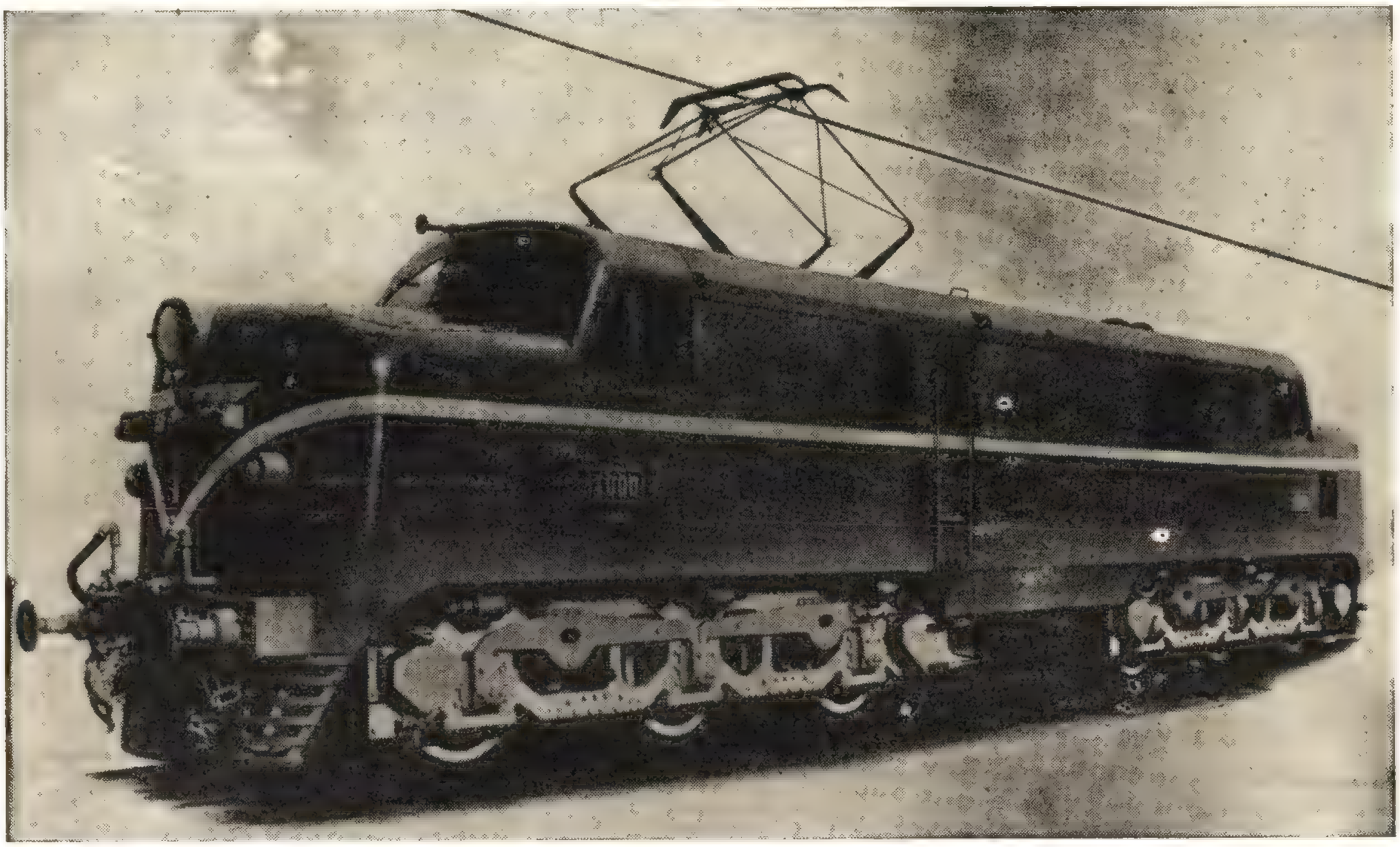
HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor



New mainline electric-locomotives for the Victorian Railways will be almost identical with this English-built Brazilian loco., which also runs on 5 ft. 3 in. gauge track. Principal difference will be the use of 1,500 volts supply instead of the 3,000 volts on the Brazilian lines. **(Courtesy Victorian Railways)**

VICTORIAN RAILWAYS

Experimental Car

The experimental passenger trailer placed in service on the suburban electric lines of the Victorian Railways has been numbered and classified 201 BT. It is the first BT car built as such, all others being converted steam trailers of the swing-door type. No. 201 is now running as part of an otherwise standard "Tait" 7-car set (in which it replaces the usual G class car) on various routes, and the public has been invited to submit comments.

No. 201 is divided internally into three saloons each with double sliding doors on either side. One saloon is reserved for smokers and has rotating ventilators, the others having normal torpedo ventilation.

The car is painted in the tomato-red formerly used for suburban stock, with window frames in moonstone grey.

New Pantographs

No. 4 M, an old swing-door motor has been fitted with a Metrovick Pantograph of the same type as already fitted to No. 442 M.

Brake and Speed Tests

Considerable interest has been aroused by braking and speed tests conducted recently between Seaford and Frankston. This section was chosen because it affords the clearest stretch of double track available in good condition. A standard 7-car train has been used, loaded with 93 tons of pig iron to represent a maximum load of 1500 passengers. It is understood that the tests are connected with the proposed use of suburban electric stock on electrified country services.

NEW ZEALAND RAILWAYS

New Cars for Wellington

Additional rolling stock for the electrified Wellington suburban lines of the New Zealand Railways entered service during November, 1949. This stock comprised motor coaches Nos. 10-16, Class Dm., and driving trailers Nos. 109-130, class D.

SWISS ELECTRIFICATION

Swiss railways, both government and private, are electrified more completely than any others. 95 per cent. of all routes and 98 per cent. of traffic are handled by electric traction.

Deceives the Eye

Not every car fitted with a pantograph is a motor coach; Swiss diners now have pantographs to supply current for all-electric kitchens.

Steam-Electric

Even more surprising is the use of pantographs on the small steam tank used for shunting (to avoid the expense of wiring all sidings). Faced with a coal shortage during the recent war, Swiss Federal Railways fitted several with immersion heaters, drawing power from the overhead whilst on wired tracks (Swiss electricity is water-powered).

UNCLE BOB REMEMBERS
By W. L. Bailey

Uncle Bob settled down for further conversation — one-sided, as usual!

"A funny thing happened one night on the Railway-Circular Quay circuit, and I don't know to this day who did it," he observed.

"There were five trams on the circuit this night and, just where the line slants down to run to the Quay, I noticed something odd about the rails in front, so jumped down to have a dekko.

"What do you think? There must have been a new chum at the job of greasing the check rails around the curves, for he had put most of the oil on the running rails and little on the check rails.

"Oh, well!" I thought, "You can only die once! So I gave her a few notches and let gravity do the rest. We shot down to the Quay like a streak of lightning, the bell ringing, and pedestrians dodging for dear life. There were two types of pedestrians that night — the quick and the dead!

"Well, next morning, there was a great shindy. It seems that one car left the rails and, by some strange chance, picked them up again further down. You could see the tracks on the road where she had done it.

"The powers-that-were put us under the third degree, but nobody would split. For months we used to dig one another about it, but the mystery was never solved."

(Another Uncle Bob story next month.)

THE EDITOR REGRETS . . .

The Editor regrets that he is, in general, unable to write direct to readers. He does, however, make an effort to answer as many letters as possible. but the editorial desk is piled high with unanswered mail.

We have mentioned this many times in the past, and it would be appreciated if correspondents would spare us the embarrassment of being expected to answer their letters when we are unable to do so. Many readers write about matters which they could ascertain from the columns of the magazine.

Don't imagine that we do not wish to correspond — we only wish that time would permit us to do so; we are always glad to hear what readers think about the magazine, or about transport — it all helps us in our efforts to give you what you want.

So — write to us, by all means, but please don't expect a reply.

The foregoing does not, of course, apply to business matters, which are handled as quickly as possible. Even here, however, there may be lengthy delays, as our time is fully taken up with editorial and publishing problems.

TRAMWAY ALBUM SOLD OUT
2nd Edition Soon

After initial setbacks and slow sales, demand for the Australian Tramway Album suddenly increased, and the first edition is now sold out. A second edition is being prepared, and will be printed as soon as finances permit — within the next six months, all being well.

Order Now

Orders will be taken now for the second edition, which will be much improved, with better layout, and many new illustrations. The price, subject to any drastic increase in printing costs in the meantime, will be 7/6d. per copy (U.S.A. and Canada, $1.00).

Special Offer

Advance orders, accompanied by cash, will be accepted at the reduced rate of 6/- per copy.

THIS PRICE APPLIES ONLY TO ORDERS PAID IN ADVANCE.

Improvements

The first edition was our initial venture in fan literature and, with no knowledge of potential demand, expenses had to be watched. This meant crowded layout, last-minute alterations, and a limited number of copies. Whilst still limited, the second edition will be in every way a far better book.

It is hoped to use an improved method of binding but, as there is still a bottle-neck in the book-binding industry, we cannot promise this definitely.

ERRATA

Corrections to items appearing in the May issue of "Railways in Australia" are as follows:—

W.A. Locomotives

New W-class locomotives for the WAGR (page 3) total 60, not 40, as stated.

Budd R.D.C.-1 Cars

These new railcars (page 17) are diesel-hydraulic, not diesel-electric; the hydraulic transmission is a feature of the design.

A.E.T.A. Hike

The town should be Whittlesea, not Winchelsea (page 16)—apologies to would-be puzzle-solvers!

THE AUSTRALASIAN RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY
(Founded 1933)

AFFILIATIONS—The New Zealand Railway and Locomotive Society.
The Australian Electric Traction Association.
The Light Railway Transport League (London).

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AUDITOR: Mr. S. C. Whalley.
RECORDER: Mr. J. C. M. Rolland.

MEETINGS

The Society holds its Sydney meetings at the Railway Institute, Devonshire Street, Sydney, on the second Tuesday in each month. All visitors are welcome. In Melbourne, the Society's meetings are held at the Railway Institute, Flinders Street, Melbourne, on the fourth Thursday in the month. All visitors are welcome.

FINANCIAL

The subscription rates are fixed at 21/- per annum, which includes the Society's printed Bulletin. Subscriptions are payable in advance. Members in Victoria, South Australia, Western Australia or Tasmania should remit to Victorian Treasurer, and all other members to the General Treasurer.

GENERAL

Back numbers of the Bulletin are still available, and members interested should write to Mr. G. C. Taylor.

Communications in connection with the Bulletin should be sent to Mr. M. A. Park, who will be pleased to receive articles or notes on railway affairs, both historical and current, which might be suited for insertion in the Bulletin.

INTERSTATE REPRESENTATIVES

In addition to the Victorian Branch, the Society is represented in South Australia and Tasmania by the undermentioned members, who are official representatives in their respective States:—

SOUTH AUSTRALIA: Mr. O. Thomas, 31 Torrens Rd., Hillside, S.A.
TASMANIA: Mr. K. Flood, 140 Wellington St., Launceston, Tas.

A.E.T.A. NOTES

MELBOURNE BRANCH

July Meeting

Thanks to the kindness of our good friend, Mr. Leslie Poole, a most enjoyable evening was spent by members when a large number of photographs were projected by means of Mr. Poole's episcope. Messrs. Leon Marshall-Wood, Peter Duckett, and Jack Richardson supplied the photographs and commentary. Mr. Richardson deputised for Mr. Noel Gipps whose duties prevented him from attending. Geographically, the scope of the evening was most extensive, and the number of unusual tramcar designs was remarkable. Mr. Poole's patience in projecting these pictures over a lengthy period was much appreciated.

Brazilian Tramways

Also illustrated with episcopic projection will be a talk on Brazilian tramway systems to be given at the August meeting. The basis of this talk will be the magnificent collection of maps, photographs, and information sent by our South American member, Senor Baird.

PCC Tour

The PCC tour will definitely take place in the very near future, and it is hoped to arrange a second tour shortly afterwards. Tentative bookings are already very heavy, and it is unlikely that any advance publicity can be given; obtaining the car depends on the requirements of Preston Workshops.

SYDNEY BRANCH

This branch has been very busy of late; it has arranged, at a heavy financial drain, for the screening of a theatre slide, at twelve suburban theatres, for three months. The slide draws attention to the need for better transport in the city of Sydney.

Tramway Re-instatement

Several A.E.T.A. members were closely connected with the re-introduction of trams to Watson's Bay. The Sydney branch has supplied much information and data to the Watson's Bay Tram Retention Committee, and also to a similar committee at Brighton-le-sands.

The branch has also been asked by the Greater Newcastle City Council to prepare a report on the rehabilitation of trams in that city.

Official Photographer

Mr. Ben Parle has been appointed official photographer to the branch.

June Meeting

At the June meeting, Mr. H. H. Matthews gave a very interesting talk, illustrated with photographs, and personal anecdotes on the Parramatta tramway of the Sydney Ferry Company.

July Meeting

At the July meeting, members were privileged to hear two very interesting talks, one by Mr. Fallwell on New Zealand tramways, illustrated by a great number of large sized photographs. The second talk was given by Mr. Reed on "Tramway Points and Signals." Mr. Reed illustrated his talk with clear, large-scale diagrams and working models of points.

Annual Meeting

Don't forget the Annual Meeting on Friday, 15th September. Make a note of the date now!

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone: LF 1665)

If outside Victoria, communicate with the nearest representative:

ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND: Mr. G. C. Stewart, 74 Fowlds Ave., Sandringham, W.2
BALLARAT: Mr. W. Jack, 31 York St., Ballarat East, Vic.
BRISBANE: Mr. F. A. Andrews, 35 Stephens St., Morningside, Q'ld.
CHRISTCHURCH: Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON: Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON: Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.

DRAFTSMAN WANTED

With an increasing requirement for sketches, plans, and diagrams for the magazine, it would help greatly if any reader could undertake the job. At the present time, almost all such matter is prepared by the Editor who, while he enjoys the work, is not a trained draftsman, and has not the time to do justice to the work.

Melbourne Branch
ANNUAL MEETING

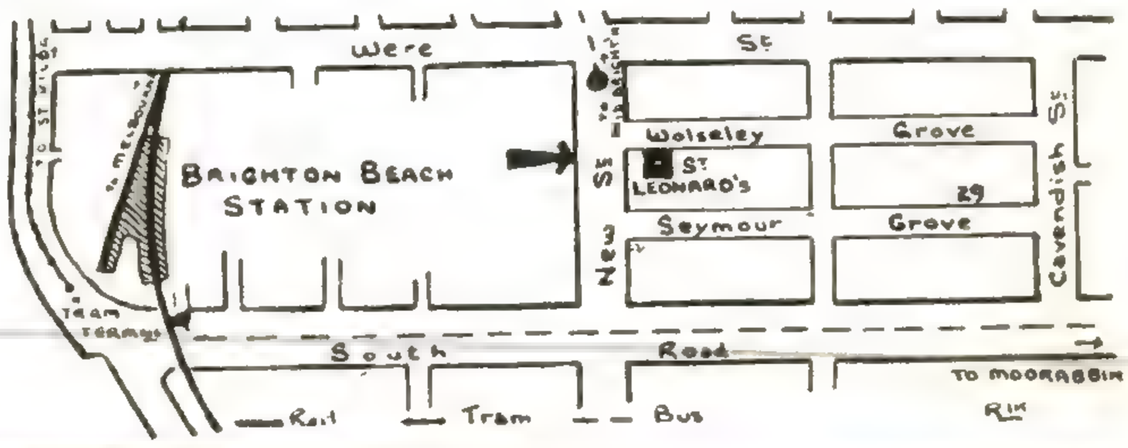
Members are asked to note that the Annual Meeting will be held this year at St. Leonard's Hall, Wolseley Grove, BRIGHTON BEACH, S.5, on

FRIDAY, 1st September
at 8.00 p.m.

(NOT Saturday, as in previous years — please note)

Take V.R. Tram or Train to Brighton Beach Station — see accompanying diagram for location of the hall.

DON'T FORGET — FRIDAY, 1st SEPTEMBER, at 8.00 p.m.



OVERSEAS ITEMS

Builder's photo. of the new Budd railcar mentioned in our last issue. These units are already in service on several American rail.oads, including the Western Pacific and the Boston & Albany (N.Y.C. lines). (Courtesy Victorian Railways)

N.Z. RAILWAYMEN FOR U.K.

Quite a large team of New Zealand railwaymen is being sent to the United Kingdom in connection with the assembly of electric multiple-unit trains and locomotives by the English Electric Co. Ltd. In addition, the Inspecting and Test Engineer will spend 12 months in the U.K., while two years each will be spent by a group of mechanics from the N.Z.R. locomotive workshops.

MULTI-GAUGE FRUIT CARS

Spanish Traffic

Fruit from Valencia (Spain) will reach London in 50 hours, by rail over the entire distance, without transhipment.

This remarkable achievement is being made possible by the introduction of a fleet of 500 special cars with adjustable axles which will operate both on the 5 ft. 6 in. lines of the Iberian peninsula, and on the standard gauge lines of the rest of Europe. Access to British Railways is by means of the cross-Channel railway ferries.

Over 30 of these cars have been completed already.

RAILWAY MAP

For the benefit of our many new readers, we reproduce again on our back cover the fine map of Australian railways specially drawn by Mr. C. C. Singleton. All tramways towns are shown, except Ballarat and Bendigo, which were crowded out by detail; they lie approximately 70 miles and 100 miles, respectively, from Melbourne.

RAILWAY GLOSSARY

British-American Equivalents

American readers often find difficulty in understanding terms used in this country which differ from those familiar to them. Here are a few, with the American equivalents in parenthesis:—

Railway (roalroad); engine (locomotive); carriage, coach, car (passenger car); luggage van (baggage car); guard's van (baggage car with accommodation for the conductor) brake van (caboose); truck, wagon (freight car); van (box car); driver (engineer, motorman); guard (conductor)—we have conductors for sleeping cars (pullman porters) and to attend to tickets and passengers on principal express trains; to shunt (to switch cars); marshalling yard (classification yard); points (switch); signal box (tower); signalman (towerman); shunter (switching brakeman); goods train (freight train); stopping train (local); pick-up (way freight).

South Australian Railways use American terms extensively, and the practice is growing in New South Wales, conditions and equipment in these States being increasingly similar.

We refer to round trips as returns, one-way tickets as singles.

An important thing to remember is that we always use the long ton (2240 lbs.) in contrast to the American short ton (2000 lbs.).

Street Railways

Tramway (street railway); tramcar, tram (streetcar, trolley); driver (motorman); trolleybus (trolley coach).

In Sydney, tram conductors are often referred to as "guards".

ARTICLES WANTED

With more space at our disposal, and fewer restrictions on the nature of our contents, we are now able to use manuscripts from readers.

As their authors will notice, we are now making use of material received some time ago, and which was held over for lack of space. Almost all of this material was of a high standard, and will be used in the near future.

Readers are invited to forward con-

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tributions on any railway, tramway, or model railway matter. No guarantee of publication is given, and manuscripts cannot be returned unless accompanied by a stamped envelope.

Some Photos., Too

We have still to go carefully with expenses, so cannot use many photographs at present. Pix of new locos. or rolling stock will be welcomed; remember they must be particularly sharp and clear.

Wanted: A Model Editor

To enable the Managing Editor to devote more time to the important but sadly neglected business side of this journal, a volunteer is required to collect and edit material for this section of the magazine.

Prospective Model Editors should preferably be resident in Melbourne; practising enthusiasts are preferred, but the armchair modeller will be considered.

If you would like to join us in developing a national model railway journal for Australia, write now to the Managing Editor, 29 Seymour Grove, Brighton Beach.

One thing — our policy is definitely pro-NMRA.

That "40" Gauge

Our apologies are due to Meadmore Models for the error in their ad. last month.

The gauge intended was, of course, HO, not 40!

Any time a new gauge arrives on the scene, it will be headlined, not sneaked in by the back way.

MODEL RAILWAYS in Australia

ELECTRIC — STEAM — CLOCKWORK
ALL GAUGES
Contributions Invited

MODEL RAILROADERS!
Read This Now!

Reaction to our first model issue has been most favourable, and this section will now definitely form a part of "Railways in Australia" regularly until such time as it becomes possible to publish a separate magazine. Just how soon that will be is hard to say — it is quite a problem to keep "R. in A." going as it is.

Building Plans

Arrangements are in hand for the publication of a series of detailed plans of Australian rolling stock, and these will appear as soon as possible. We shall, of course, always be glad to receive for publication suitable plans of locomotives, rolling stock, and structures from any of our readers.

Layout Articles

Similarly, we shall be glad to have descriptive articles on individual or club layouts. Last month's notes on the Overland R.R., and the current article on Mr. Clark's Mayfield Lines, will indicate the sort of thing needed. A layout diagram should accompany your article; this should, preferably, be drawn in black India ink, on plain white paper, and should be about 6½ in. wide. However, if you are not handy with a pen, send along a pencil sketch showing all details clearly, and we will do the rest. Photographs, also, are desirable.

Model Photographs Wanted

We shall be glad to print illustrations of models built or adapted by our readers. Prints must be particularly sharp and clear, however, or they cannot be made into satisfactory blocks for the magazine.

Write To Us

We cannot enter into correspondence with readers — 24 hours are not enough in one day, as it is! — but we should be interested to receive readers' comments, criticisms, and suggestions. Naturally, we don't promise to act upon them, but we should like to know what you think.

With your co-operation, we look forward to a bright future.

THE ETERNAL PROBLEM OF POWER SUPPLY
By K. N. Lowry

When two or more model railroaders foregather, sooner or later the perennial topic is bound to arise — D.C. versus A.C., Two-Rail versus Three-Rail. Each method of propulsion has its firm adherents, who are convinced that their choice is the only method, and those who use anything else are plain crackers; and their great mission in life is to convert all heretics to their way of thinking.

In other walks of life, such an attitude would be considered an unwarranted interference in the freedom of thought and action of our fellows. It overlooks the fact that the great fascination of model railroading is its infinite variety, and that each person may express his individuality without departing from the basic objectives of the hobby. Standards are essential for working parts, but the N.M.R.A. in its wisdom does not make an arbitrary ruling concerning A.C. or D.C., Two-Rail or Three. Stipulations are made only to ensure uniformity in each type of power supply — the voltage to be used, polarity for D.C. operation, insulation for Two-Rail, etc. — so that motors and power packs of the right type may be supplied, and equipment will be interchangeable.

Another factor is that all the forms of propulsion have their merits and otherwise. Each will appeal to modellers according to their outlook and requirements, but none is so ideal that it warrants discarding the others. I submit that the modeller may choose any of the known forms of electrical propulsion, or even cook up another method of his own, and still run trains to his entire satisfaction. The basic essentials for all methods are clean contacts and adequate collector surfaces, proper insulation and firm joints where required, and wiring heavy enough to carry low voltage current without much loss. Electricity may be likened to water — a small diameter pipe will not deliver at a satisfactory pressure, and leaks or faulty connections will make a further drain on the pressure.

On my own system, I use Altrnating Current and Third Rail, which to date have suited my needs, but I have no particular bias on the subject, and would not hesitate to change to other methods at some future date, should I decide they suit me better. To those with railroads in operation, I have no suggestion to offer, other than to continue with the system of their choice, providing it works to their satisfaction. To the newcomer, I will give a brief survey of the systems in general use, how they are affected by the limited amount of commercial accessories available in Australia — and he can weigh the possibilities of each in regard to his own case.

DIRECT CURRENT:

Standard for all gauges is 12 volts. D.C. is the purer form of current, and operation is smoother than on A.C., especially in the lower speeds, starting and stopping. The greatest advantage is the infallible reversing obtained when Permanent Magnet motors are used.

I consider that the only disadvantages of D.C. are the more elaborate wiring required for multi-sectioned systems than with A.C.,

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Watch for Announcement

and the power supply—D.C. requires the use of a Transformer and Rectifier Power Pack, which is expensive, or Storage Batteries, which are messy. In passing, this is the viewpoint as it would apply to the average man who tackles this hobby —not the electrical wizard who can knock up his own rectifier for a few pence, or the happy soul who doesn't mind fiddling with trickle chargers, and having water and acid around the floor of his pike.

ALTERNATING CURRENT:

Standard for all gauges is 16 volts — which will operate universal motors designed to operate also on 12 volts D.C. Although D.C. is smoother, what is overlooked by the D.C. advocates is that most electric motors designed for model railroad work have a power reserve much in excess of requirements for the usual layout, and while their performance may be just heavenly on D.C., they will also give every satisfaction on A.C. I have locos which will crawl around yards without jerking, and will haul up to 40, 4-wheel freight cars, which performance would satisfy quite a number of model rails. Probably on D.C. they would haul 50 cars, but since I operate 11 — car Freight Trains, the prospect does not have much bearing on my schedule of operations.

The feature of A.C. is its ability to be transmitted long distances without excessive voltage drop, and that it can be transformed to higher or lower voltages, which is why it is used for general lighting and power purposes. These features apply also to model railroads — power is supplied through a Transformer, stepping down the main household voltage to 16 volts, and if adequate wire is used, the juice will not show a great voltage drop even on a fair-sized railroad.

On trackwork comprising more than one section, the wiring is simpler. The running rail may be bonded together through the entire system, and the only breaks required are between the third rails of each section (or one of the running rails in Two Rail). On the BPR, I have a heavy, seven-strand copper feed running around the system, bonded to the running rails approx. every three feet, eliminating the losses of power which occur when the rails alone are used.

The great disadvantage of A.C. is Reversing, which is limited to Hand Reverse or Sequence. Apart from the debatable naughtiness of touching the sacred loco. with that out-of-scale hand, the hand reverse can be a nuisance if the loco. is in an inaccessible spot — which same most layouts seem to have. Sequence Reverse will play up on dirty track, but will give better results if auxiliary collectors are installed on the Tender.

TWO RAIL:

By insulating one side of a train, and insulating the running rails from each other, the current is fed to the motor via rails and wheels, and third rail is eliminated.

Two Rail provides the most realistic trackwork for modelling Steam type motive power, has no dead spots at points and crossings, obviates the necessity of laying third rail. These are the main features, and there are several secondary features. It has become almost universal in U.S.A., where the hobby industry is tooled up to provide all the necessary insulated equipment. A track signal circuit has been devised, removing the last claim of the 3-railers, and it is contended by proponents of Two Rail that everything possible in Three Rail is feasible also in Two rail.

As yet, Two Rail has a relatively small following in this country. Insulated wheels for rolling stock are available, but not insulated locos or loco wheels, which are the most important parts — and for the average modeller, a most difficult job to undertake. Whether these parts become available will depend on the extent of demand, but if and when they do, the problem of going Two Rail will be no greater than with Three Rail. Insulated metal wheels for locos and rolling stock cost more than Three Rail wheels, but the extra cost is offset by the elimination of the cost and time spent on Third Rail.

STUD CONTACT:

The users of this method claim they have all the features of Two Rail, without the bugbear of insulation. Small nails or pins are driven into the sleepers, between the rails, so that they project about 1/16 in. above sleeper level, and spaced approx. 2½ in. apart. The studs are ramped at approaches to points so that they are about 1/32 in. above rail level passing through the points. Contact is made with a hinged skate about five inches long, suspended under the loco.

Each stud is connected to a heavy feeder wire running under the sleepers or baseboard. The studs are very unobtrusive, and the appear-

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ance is very akin to Two Rail, with the same feature of having no dead gaps.

This system has a number of followers, especially in Victoria, and its users claim it is entirely satisfactory. The only variation from standard Three Rail equipment is the necessity of making and installing the collector skate on locomotives, thus the system can utilise equipment readily available on the local market.

If you don't mind installing and wiring several thousand studs, there are no other important objection to this method.

THREE RAIL:

There are several varieties—Level and Raised Centre Third, Outside Third, and my own Offset Inside Third. All have the same feature of using an extra rail, contacted by collector shoes from the locomotive, for positive or active, and the running rails for negative or neutral.

Opponents of Three Rail contend that it lacks realism as a roadbed for steam-outline locomotives — unless electric-type locos also are used on the system. This is quite correct — but what is overlooked is that electric powered model railroad systems are one big fake. Models of of steam are driven with electric motors, even those who model electric-type locos resort to other subterfuges which are not full-size practice; and while we may make our equipment externally to scale dimensions, direct scaling of stresses and materials is not practicable, and many diversions are made from prototype in the interests of durability and operation. We have to draw the line somewhere, and just where you draw it depends entirely on your own viewpoint; so if you do not find Third Rail offensive to your finer feelings, there is no reason why you should not use it.

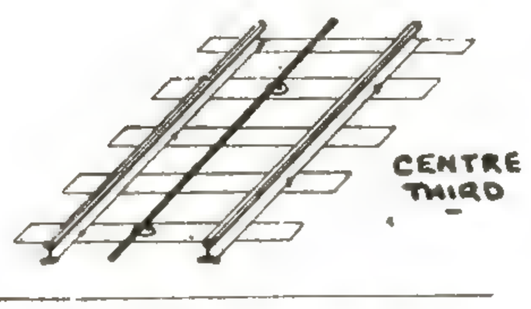
Third Rail involves gaps at points and crossovers, usually shorter than the space between collector shoes under the loco, so that contact is maintained while bridging the gap. However, the habit of trackwork in acquiring dirty spots, especially near these gaps, often results in breaks in the circuit causing locos to stall over points. This applies especially to sequence reverse units, which will go into neutral at the slightest interruption to power supply. The remedy to this trouble is to instal additional collectors, usually under the Tender. Other than gaps, Three Rail presents no real problems, and equipment is available commercially. Any of its variations will work satisfactorily, but better results seem to be obtained by using Raised Third Rail in preference to Level.

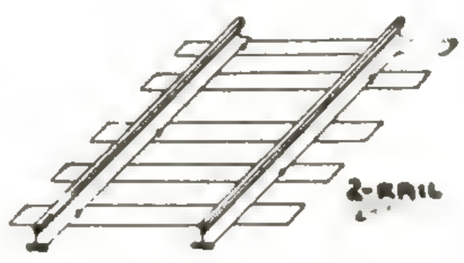
OVERHEAD CONTACT:

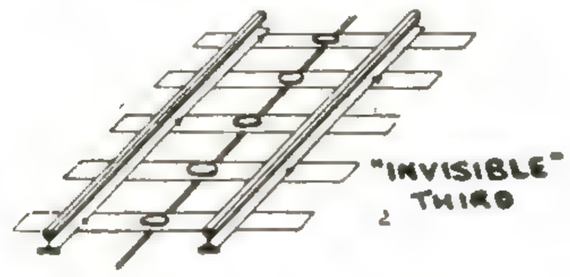
Primarily for the Juice Fan, this appears to be ideal in its particular field, as regards operation. Compared with other types, it has a relatively small following in this country, but those I have seen are successful. As with prototype, a lot of work is involved in erecting poles or standards, wires and guys — the market has not catered for this branch of the hobby, motive power is not available locally, and the modeller has to resort to his own ingenuity for overhead gear, trolley poles or pantographs. If these problems can be solved, trackwork and rolling stock present no difficulty, as they are standard with Three Rail.

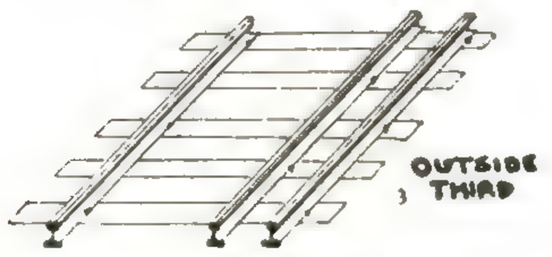
So there they are, the many ways you may run your trains with electricity. Much more could be said about each type, but enough is there to show that they all have their good points, and it is just a matter of personal selection. The main thing is that you can run trains with all of them, and it is not a matter for worry and heated argument if your brother Model Rail decides to use A.C. or D.C., Two Rail or Three Rail.

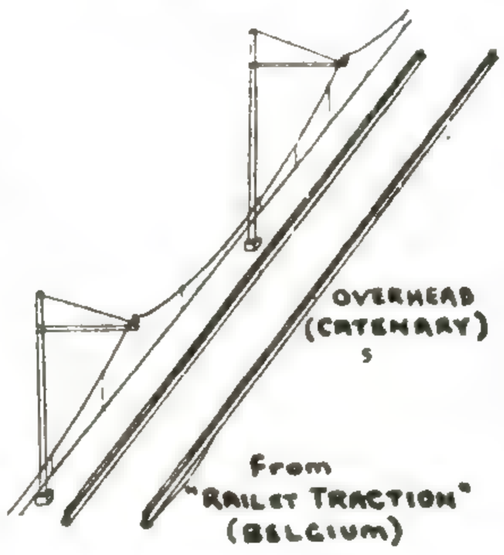
Next Week: "THE B.P.R. BUILDS A LOCO."











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MAYFIELD LINES

By L. A. Clark

The Mayfield is an outdoor "0" gauge layout with a route length of 290 feet, occupying a space of 30 x 60 feet. The main line is double throughout, and includes 60 feet of quadruple track and a single track branch, 45 feet long.

Motive power is clockwork. This, of course, has certain limitations, chief of which are inability to control trains without handling and the locomotives' lack of sufficient power to haul realistic loads. Regarding the first, this somewhat unsatisfactory feature may be minimised by judicious winding and by suitable spacing of stations. Concerning the second, it is well-known to clockwork operators that nearly all locos are geared in such a way that they pull better when running in reverse. This peculiarity has been capitalised on the Mayfield to the extent that all tender engines have their mechs. mounted back to front so that, when running smokebox first, they are actually in reverse and exerting a tractive effort 20 to 30 per cent. greater than when used as intended by their makers. The reason for this feature is hard to fathom, but one explanation given is that, engines when running tender first with a train, are generally propelling. It is assumed to require more power to propel than pull, therefore the gears have been arranged accordingly. Be that as it may, it is safe to say that most operators would prefer to have the greater power available when doing normal running. However, when the works are reversed it is possible to haul at least 140 scale tons (one pound = 29 tons) while several locos are able to pull up to 300 tons.

Clockwork traction, however, is not without virtue, as the track requires no special preparation before using, the only necessary preliminary being a brush over the surface of the rails to remove any surplus dirt or grit.

It has been the aim of the Mayfield Lines, within the limits of the facilities available, to reproduce as far as possible, the movements and services carried out on a real railway, and, to this end, the following services are operated:—multiple-unit "electric," "steam" suburban, "steam" country and goods trains, while a rail motor also finds a place in the working. All locos and rolling stock are built in the line's own shops and are modelled on N.S.W.G.R. prototypes, and worked and operated as nearly as practicable in accordance with the practices of that instrumentality.

There are 15 locos available for use, consisting of 1/10, 1/11, 2/13, 1/17, 2/30, 4/32, 1/34, 1/35, 1/36 and 1/53 class engines, as well as 1/18 class without power and a 79 class Diesel-electric yard shunter, also unpowered. Other motive power includes two "electric" motor cars and a rail motor. There are 28 items of "steam-hauled" passenger cars and sundry goods vehicles, mostly of bogie type. Four "electric" trailers and two dummy motors for the multiple-unit sets, which, with the two motors previously mentioned make 2/4 car "electric" trains comprise the total rolling stock.

The area of backyard used, which is level from east to west and slightly falling from north to south might be considered ideal for the purpose, as clockwork locos are not renowned for their hill climbing capabilities, and grades on the main line do not exceed 1: 70, and there is very little of this.

TRACK:

Rail is of Austral Bronze, Section No. 702. Wooden sleepers are used, to which shim brass is tacked, and the rail soldered to this. The brass-topped sleepers are spaced five inches apart, and additional, ordinary wooden ones are placed between for the sake of appearance. The track is set in a weak cement mixture which gives it the required rigidity and at the same time, permits of alterations being made with a minimum of trouble.

(To be continued)

(Layout plan next month)

SAVE THOSE FINGERS!

Ever burnt your fingers soldering small metal assemblies? The "Model Railroader" recently carried a suggestion that pieces of ¼-in. felt be used; they are stated to have necessary resilience, as with the fingers. Naturally, they char before long, and have to be replaced, but this seems cheaper than doctoring burnt fingers!

MODEL RAILROAD ROSTER

WEST HIGHLAND (HO) electric centre —third: R. Phillips, 169 Hotham Street, East St. Kilda, Vic.

EAST IVANHOE (O) electric, overhead and centre studs, outdoor, D.C., ¼ in. scale, NMRA standards, V.R. prototype: E. Mainka, 12 Flora Grove, Ivanhoe, Vic.

Change of Gauge

Mr. T. Dunlop writes that he is changing over to HO gauge, his Happy Valley R.R. having suffered loss of right-of-way, and subsequent reduction of space through domestic removal.

Model Railroaders —

Let us have details of your system, whether it be steam, electric, or clockwork, for inclusion in this roster.

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BOOK REVIEW

LOCOMOTIVE PRACTICE and PERFORMANCE in the TWENTIETH CENTURY
By Cecil J. Allen
(W. Heffer & Sons Ltd., Cambridge)

Mr. Allen is well known to two generations of railway enthusiasts, having written continuously on locomotives for over forty years; he is one of the greatest living authorities on his subject and this book serves only to enhance his reputation. In addition to a complete and simple exposition of the design, building, maintenance, and handling of locomotives, the author details and discusses many noteworthy runs, including comparisons between different types of locomotives. Most principal countries receive mention, and the exponents of diesel-electric and straight electric locomotives will be glad to find their favourites included. In addition to diagrams, there are 148 photographs of diverse nature but of unvaried excellence.

(302 pp. 6" x 8¾", hard cover — our copy McGill's Authorised Newsagency, 32/9d.)

NEW DEVELOPMENTS IN RAILWAY MODELLING
By Edward Beal
(Adam & Charles Black Ltd.)

The name of Edward Beal has long been associated with expert railway modelling and the latest product of the author's pen will not disappoint either the new reader or those already acquainted with Mr. Beal's works.

Although titled "New Developments" the book covers adequately all features of railway modelling and is equally valuable as a textbook for the newcomer and as a reference book for the old hand. Locomotives, rolling stock, permanent way, signalling, scenery and even road vehicles (trams are, regrettably, overlooked) and various methods of constructing them are covered with remarkable thoroughness. A novel feature is the inclusion of a month-by-month maintenance and overhaul programme.

Overseas railways receive considerable space, both rolling stock and structures modelled on overseas prototypes being illustrated.

Many pages are devoted to hints on operating technique, the provision of operating and access spaces, and the use of doorways and corners to advantage.

Altogether, well worth the money!
(284 pp., hard cover, 6" x 9" — our copy, Meadmore Models—23/6d.)

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Letters to the Editor

Readers are invited to write letters for publication on any matter concerning railways or tramways in this country. Noms-de-plume will be printed, but in all cases the reader's correct name and address must be supplied when writing.

We do not print letters containing political or other contentious matter.

While there is no positive limit on length of letters, conciseness will be an advantage in securing publication.

The Editor,
Railways in Australia.
Dear Sir,

I should like to draw attention to two items appearing in the outer section of the April '50 issue. They are separate instances of poor appreciation for the comfort of the paying passenger, but are due to the same cause. They are: (1) ". . . it is proposed that the existing suburban rolling stock will run on the local trains between Dandenong and Warragul after running express from Flinders Street." And (2) "A feature of the Northern electrification (NSW) is expected to be the operation of suburban-type multiple unit cars as far as Gosford — 50 miles."

Until I rode in a Victorian electric running express, I thought that a NSW counterpart was the worst possible ride on rails, and I dare say you will share that opinion along with many others. That it is not possible to correct such faults is seen in commentary on the poor riding of even the Pullman stock of British Railways (Southern Region) to Brighton — about 50 miles.

Yours, etc.,
RONALD W. GOGGINS.

Lakemba, N.S.W.

(Whilst we share our correspondent's horror at the prospects mentioned, it must be pointed out that the Gosford proposal is in respect of week-end excursion traffic, and the main reason for using suburban stock would be the high passenger capacity. The trip would certainly be no worse than under existing conditions. For normal passenger traffic, locomotives are to be used, with the present steam stock. Much rough riding of V.R. suburban trains is due to track conditions, particularly the short rails used on many sections. The criticism of Southern Region electric stock was, if we remember correctly, by comparison with standard Pullman cars used in steam service, and which are phenomenally smooth-riding. In two years of fairly regular travel on S.R. electric trains, we never noticed whether we were in a motor coach or a trailer when modern stock was used. Modern multiple-unit stock, particularly on some of the heavy interurban lines in the U.S.A., can be very comfortable. We do, however, agree that existing Australian m.u. cars provide far from the perfect ride—Ed.).

"TATTOO" LOCOMOTIVE

The Editor,
Railways in Australia.
Dear Sir,

In the March issue of R. in A. I saw an enquiry concerning a "Tattoo" locomotive. I thought it might interest your correspondent to know that there is mention of such a type in "Narrow Gauge Railways of Britain", Henry Howson, published by Ian Allan, London, 1948. There is a photo. of this quaint-looking, old narrow gauge loco. on page 21. It is the larger locomotive numbered four. The reference to it is noted in the table at the back of the book, page 74. It comes under the heading "Great Western Railways", ex-Corris Railway. The history of this line is given on pp. 20, 22.

If your correspondent is not able to obtain a copy of this book, I should be glad to lend mine. Being (as adults often remind me) only twelve, and with a comparatively small knowledge of locos., I am unable to find more particular information concerning "Tattoo" locomotives.

This seems to be as good a time as any to offer congratulations on your journal, of which I am an enthusiastic fan.

Yours, etc.,
A. D. McLENNON.

Heidelberg, Vic.

(Thank you very much, indeed — I am sure our correspondent and many others will be interested. As regards your age, you should take comfort from the reply by William Pitt the Younger to the comment by King George III: "You are very young, Mr. Pitt." Said Pitt: "Time will cure that, Sire!"—Ed.).

CLASSIFIED "ADS"

Small commercial advertisements under this heading will be inserted. Charges are 3/- per inch for one insertion or 25/- per inch for one year.

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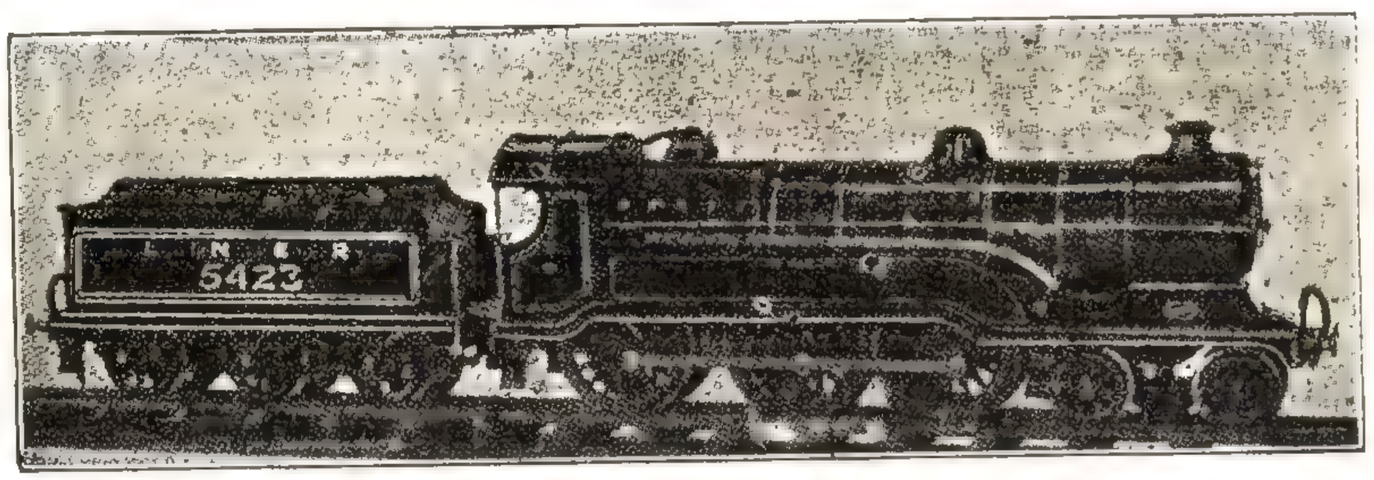

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Fan Mail

The Editor regrets his inability to reply direct to correspondents, except in special circumstances.

There is still a very large backlog of unanswered mail which will be tackled as speedily as possible.

J. F. LEECH, Ashburton, Vic.—Change of address noted. Thanks for letter.

J. J. EDDY, Goulburn, N.S.W.—Yes, May issue was the first. Very pleased to hear from you.

F. B. McCONNELL, South Strathfield, N.S.W.—I hope to print the type of article you mention almost exclusively. Good wishes reciprocated.

R. J. JEFFERIES, Brisbane, Qld.—Thanks for a very interesting and helpful letter. As you will see in the near future, your diagrams were most welcome.

L. T. LALOR, Sea Lake, Vic.—Feb. issue sent; thanks for letter.

A. H. LANE, Melbourne, Vic.—You now have all available back numbers—all others are out of print.

H. MACDONALD, North Bundaberg, Qld.—Loco. book will be announced in "R. in A." well in advance of sale.

C. J. MACPHERSON, Hamilton, N.S.W. —Change of address noted.

B. J. LAWRENCE, West Ryde, N.S.W. —Hope you have found the new set-up O.K.

R. BOLAND, Sarina, Qld.—Quite O.K.; I once spent some time up your way and appreciate the delays experienced.

Dr. STEPHEN SUGGIT, Brisbane, Qld. —Mailing list noted as directed.

K. GOFF, East Ipswich, Qld.—Thanks. I hope you will always feel that way!

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

Meetings last Saturday night in each month at 8 p.m. in Club House, at above address.

Interstate visitors given warm welcome.

Secretary: R. R. Steward, same address.

THE AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY meets regularly as follows:—

SYDNEY BRANCH: Railway Institute, Devonshire Street, Second Tuesday in each month. Secretary: H. H. Matthews, 27 Ross St., PARRAMATTA, N.S.W.

MELBOURNE BRANCH: Railway Institute, Flinders Street, Fourth Thursday in each month. Secretary: R. B. McMillan, 15 Mercer Rd., MALVERN, S.E.3.

QUEENSLAND SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings every month; contact the Secretary, Mr. C. H. Garner, Gray's Rd., GAYTHORNE. Model Railway Section with operating O gauge, and HO under construction, meets first and third Mondays; contact the Secretary, Mr. C. Harrison (B3508), or the Public Relations Officer, Mr. C. McTaggart, 101 Laura Street, TARRAGINDI.

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Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

Mr. A. J. THOMAS, Concord, N.S.W., asks a number of questions:

(1) What timber tramways in the Warburton district of Victoria are still in operation?

ANSWER.—None. The last to close was the Federal Tramway, in January, 1950.

(2) What details are available on the following Victorian lines:

(a) Granton Sawmill & Timber Seasoning Co.'s tramway?

ANSWER.—Gauge 3 ft .0 in.; 1 steam loco. (scrapped some time ago) and 2 tractor locos. Thought to be closed.

(b) Kinglake-Central Mill tramway?

ANSWER.—Gauge 3 ft. 0 in.; 1 tractor loco. Thought to be still operating.

(c) Loch Valley Sawmilling Co.'s tramway, Noojee?

ANSWER.—Gauge 3 ft. 6 in.; once used Baldwin 0-4-0 saddle tank loco. from Sorrento Beach tramway; now closed for many years.

(d) Netherlands Harbourworks Co., Appleton Dock Construction?

ANSWER.—Closed at beginning of World War II, and tracks pulled up; gauge 2 ft. 6 in.; 6 steam locos.

(e) Mississippi tramway, Warburton?

ANSWER.—Gauge 3 ft. 0 in.; steel rails; used steam locos.; has now been closed for some 12 years.

(3) What motive power is provided on the Cheetham Salt Co.'s line at Moolap, Victoria?

ANSWER.—2 ft. 6 in. gauge; originally horse-drawn, now 6-coupled tractor locos.

(4) Has the Benalla-Tatong line been closed? (Victorian Railways).

ANSWER.—Yes.

READERS' WANTS

Member of the A.R.L.H.S. and bona fide subscribers to this journal may have small advertisements inserted at the nominal charge of 1/- for five lines. Forward postal notes or stamps (up to 2½d. value) with advertisement to the Managing Editor.

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Contributions on railway and tramway matters welcomed. Articles, photos., etc., should be forwarded to the Managing Editor.

News items should be addressed as follows :

Railway News Editor,
Traction Publications,
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in the case of railway news, and

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ELWOOD, S.3
from tram and trolleybus news.

NOTICE
ALTHOUGH DATED AUGUST/SEPTEMBER, THIS NUMBER REPRESENTS ONLY ONE ISSUE FOR PURPOSES OF SUBSCRIPTION AND SALE.

Volume Three, Nos. 7-8. August/September, 1950.

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OUR COVER PICTURE (see Geelong article, page 8).

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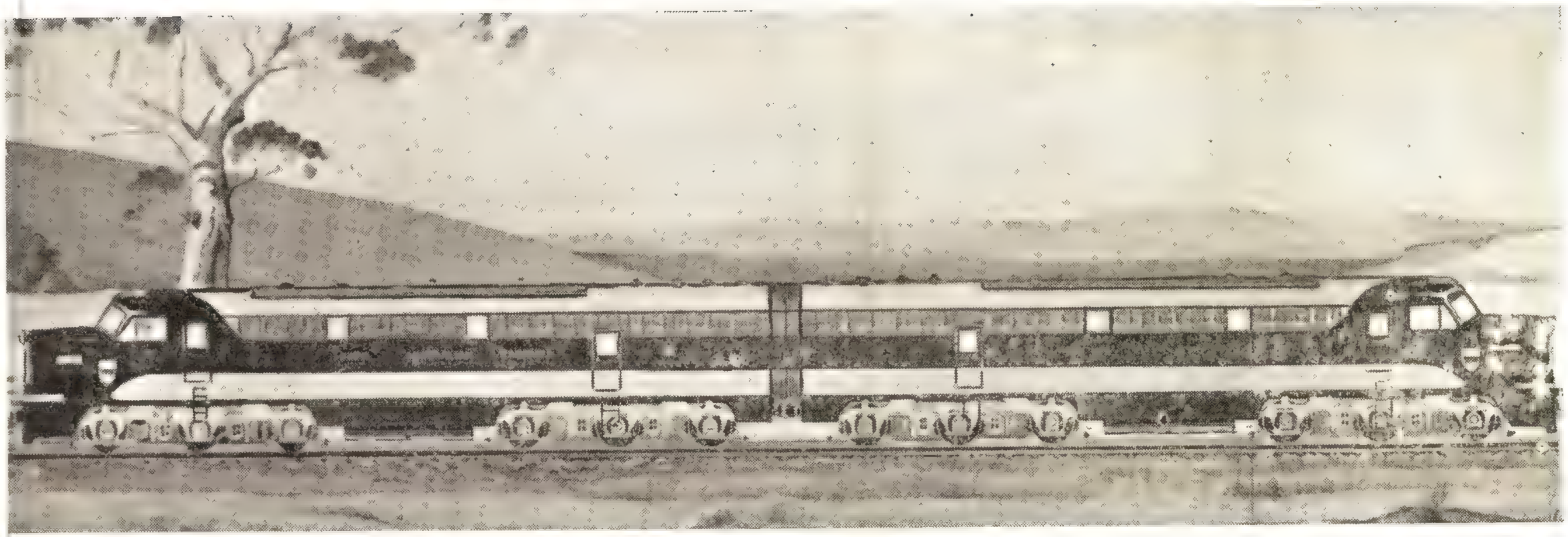
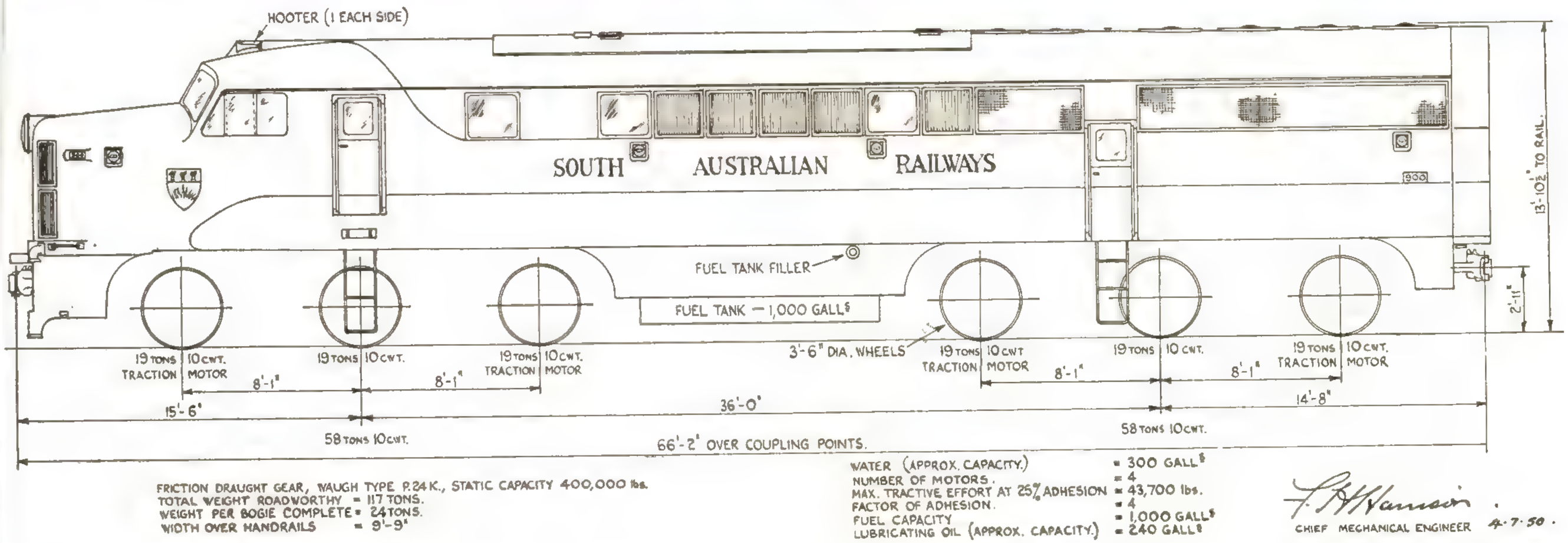
AUSTRALIA'S FIRST MAIN LINE DIESELIZATION

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TOTAL WEIGHT ROADWORTHY = 117 TONS.
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WATER (APPROX. CAPACITY.) = 300 GALLS
NUMBER OF MOTORS. = 4
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FACTOR OF ADHESION. = 4
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For some years, increasing traffic on the "Hills" section of the South Australian Railways' main southern line out of Adelaide has provided a growing problem.

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Each of 1,760 h.p., these locomotives will operate as five tandem units, hauling all freight and passenger trains. Because of their sustained tractive effort, it will be possible to run [illegible] trains at passenger speed, and side-tracking will be eliminated, the even flow of trains giving the maximum availability of existing track facilities.

More powerful steam locomotives were out of the question because of axle load restrictions.

(Blocks, co[illegible]sy S.A.R. Institute Magazine).

WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

NEW MULTIPLE-UNIT SUBURBAN TRAINS

For New Zealand Railways

At the Preston works of the English Electric Company Ltd., an order for 40 motor coaches and 71 trailer coaches for the New Zealand Government Railways is approaching completion. This rolling stock is intended for operation on the Wellington-Paekakariki, and Wellington-Upper Hutt lines. Like other lines of the N.Z.G.R., these tracks are laid to the 3ft. 6in. gauge.

The cars are extremely modern in all respects. Internal layout is of the open saloon type, with centre gangway. To sets of air-operated, double sliding doors, spaced at one-third of the length of the car, give access to the interior. To facilitate passenger dispersal, longitudinal seats are placed adjacent to the entrances, and separated from the doorway by full height bulkheads. For the majority of the seating, two-place transverse tipover seats are employed.

The motor coaches are fitted with luggage compartments at the pantograph end. Because of the restricted structure gauge, a roof well is provided in which to house the pantograph; this reduces headroom in the van compartment to 6 ft. 6 in. A driving cabin is provided at each end, as, distinct from the trailer cars which have a driving cabin at one end only. The "head end" equipment includes a large roof-mounted headlight, four marker lights, a neat cowcatcher, and the usual jumper cables.

The car bodies are built on what is known as "unit construction"; this uses the car sides and roof as stress-carrying members, and the whole body acts as a cylinder when under load, thus making the greatest use of material. All main members are of U-section steel to which is welded the sheet steel skin. All outside edges are rounded, and the exterior is free from projections.

Energy at 1500 volts DC is collected from the overhead by a light-weight, double-pan pantograph. The motor coaches are fitted with four-motor equipment, the 750-volt traction motors each having a continuous rating of 120 h.p., and a one-hour rating of 165 h.p. A motor-generator set is used to provide 120 volts D.C. for the control system. The control gear is electro-pneumatic, the master controller having "shunting," "series," "parallel," and "weakfield" positions. Actual acceleration is automatic, although a switch is provided in the cabin, by means of which the driver can adjust the rate of acceleration, depending on the number of trailers being hauled, and the grades encountered. The equipment is capable of giving an acceleration rate of 1 m.p.h. per second hauling two trailers up a 1 in 40 gradient, whilst the maximum speed attainable on level track is 55 m.p.h.

The air brakes are Westinghouse electro-pneumatic and the clasp brakes are operated by cylinders mounted on the outside of the trucks, one on each side. Automatic train stops are fitted to the leading axle box, corresponding to each control station.

One-piece, cast steel trucks are used, having outsideswing links for the bolsters, which are cushioned by both coil and leaf springs. All journals are fitted with roller bearings, and the wheels, of 36½ in. diameter are the rolled steel disc type.

Because of the frequency of the inclement weather, electric heating is provided by 500-watt heaters, ten being fitted along each side of the car so that, in all, each car has twenty heaters. A power bus line is provided through the train to supply the heaters in the trailers.

To ensure a measure of air circulation, louvres are let into the lower portions of the sliding doors. Air for the self-ventilated motors is taken in through filters in the car sides and passed through the car floor into the motors by means of flexible bellows.

The motor coaches seat 56 passengers, the trailers 72, while the empty car weights are 40.85 and 26.15 tons respectively. In dimensions, the two types of cars are identical:

Truck centres, 43 ft. 3 in.

Truck wheelbase, 8 ft.

Length over coupler pull lines, 63 ft. 4in.

Length over car body, 60 ft.

Maximum width, 9 ft. 8½ in.

Height over panto (locked), 11 ft. 9 in.

The car interiors are finished in three alternative colour schemes to relieve monotony. In the first, brown is used below the waist rail, with white for the upper portion. The second is dark and light blue, while the last is dark and light green. The ceiling is, in all cases, white.

This description should be of particular interest to Australian readers, for the Committee on Electrification of the Brisbane Suburban System recommended that 175 cars identical to these be obtained to operate the proposed Brisbane system.

WESTERN AUSTRALIA

Many New Developments

LOCOS, ROLLING STOCK

C.T.C., Track, Yards, Depots

To enable the system to carry the unprecedented now being experienced, a large development programme has been initiated.

To provide additional rolling stock, 107 passenger cars are to be obtained from various sources. Fifty complete cars and 57 underframes are to be purchased from outside the department, and the 57 car bodies will be built at the Midland Junction shops. The types included in the passenger car order are lounge, sleeping, dining and sitting cars.

At Collie, new marshalling yards and a new locomotive depot are to be provided in order to handle the anticipated three million ton per year coal traffic. The track between East Perth and Bunbury is to be strengthened and relaid with 80 lb. rails welded into 200-240 ft. lengths. The 60 lb. rails so released will be used on the Boyanup-Busselton line. In all, 17,000 tons of rails are on order to relay and strengthen tracks.

In what will be the first installation of Centralised Traffic Control (known as C.T.C.) in Australia, equipment is now on order for installing on the Armadale-Bunbury line, with investigations being conducted as to whether to extend the system to Bowelling.

At Bassendean, a new marshalling yard and locomotive depot are to be provided, together with a direct connection to the South West railway. Yards at Narrogin, Aramdale, Pinjarra, Bridgetown and Welshpool are to be extended and re-arranged.

On order from outside contractors are 4,000 freight cars of various types, and for the Midland Junction Workshops £650,000 worth of machinery has been purchased. The first of the "W" class light 4-8-2 locomotives is expected to arrive next November.

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BOOKS for RAILWAY ENTHUSIASTS

"WAR on the LINE" (210 pages: 8in. x 5in.). This book tells the story of the Southern Railway during the recent war. Illustrated with coloured pictures, good photos and map. Price, 10/6.

"BY RAIL to VICTORY" (186 pages: 8½ni. x 5½in.). This book describes the activities of the L.N.E.R. during World War II. Illustrated with maps and plenty of good photos. Those who have read this book praise it well. Price, 11/3.

"BRITISH LOCOMOTIVE TYPES." 6th edition (140 pages: 9in. x 6in.). Contains diagrams with principal dimensions, weights and technical details of locomotives used in Great Britain. Price, 11/8.

Bound editions of Vol. 2 of "RAILWAY PICTORIAL" from March, 1949, to January, 1950, (192 pages: 10¾in. x 8in.), with supplement showing new colour schemes and markings for the Nationalised locomotives and rolling stock. Illustrated with maps, drawings and plenty of excellent protographs. Price, 37/-.

"THE NORTH LONDON RAILWAY" (25 pages: 7½in. x 5in.). Illustrated with map and photos. This book gives information of interest to those fond of extinct railways. Price, 4/9.

"The TAFF VALE RAILWAY" (41 pages: 7½in. x 5in.). This book tells the history and characteristics of what may be claimed as the first public railway in South Wales. Illustrated with map and photographs. Price, 7/-.

"The HULL and BARNSLEY RAILWAY" (24 pages: 7½in. x 5in.). This book describes what was the last big railway scheme in England to be successfully launched as a private undertaking. Illustrated with photographs. Price, 5/6.

"The MARYPORT and CARLISLE RAILWAY" (37 pages: 7½in. x 5in.). This book describes what was one of the most prosperous of all British railway companies. Price, 5/6.

"NARROW GAUGE RAILS to PORTMADOC" (158 pages: 8¼in. x 5½in.). This book describes the fascinating narrow gauge railways in North Wales. Profusely illustrated with photographs, sketches and a map. Price, 24/6.

"The COLONEL STEPHENS RAILWAYS" (21 pages).
"MINERAL RAILWAYS" (22 pages).
NARROW GAUGE RAILWAYS of WALES" (51 pages).
"ENGLISH NARROW GAUGE RAILWAYS" (67 pages).
"STANDARD GAUGE LIGHT RAILWAYS" (35 pages).
"LIGHT RAILWAYS of EIRE" (39 pages).

These books are 7¼in. x 5in., and describe the systems for which they are titled. All are 2/9 each.

"MODERN SIGNALLING on BRITISH RAILWAYS," 4th edition (170 pages: 7¼in. x 5in.). This book describes modern signalling apparatus used in Great Britain. Illustrated with photos and diagrams. Price, 6/4.

"RAILWAY SIGNALLING," 1949 edition (82 pages: 7¾in. x 5¼in.). This is a similar type of book to the former. Price, 5/6.

"RAILWAY SIGNALLING and COMMUNICATIONS," 2nd edition (408 pages: 8¼in. x 5¼in.). A technical book dealing with the installation and maintenance of signalling equipment. Chapters on electrical theory and telephony. Illustrated with diagrams, photographs and sketches. Price, 11/3.

"RAILWAYS for ALL," 1950 edition (243 pages: 8in. x 5in.). An interesting book with modern information and photographs about railways in many parts of the world. Price, 11/9.

"LOCOMOTIVES of SIR NIGEL GRESLEY," 1946 edition (174 pages: 8in. x 5in.). This book deals with the products of the genius who was once Locomotive Engineer for the L.N.E.R. Price, 15/-.

J. O. SMITH,
22 Glenore Road,
CANTERBURY, N.S.W.

NEW RAILCARS FOR TASMANIA

The main details of these cars, six of which are being built, are as follows:—

Road Nos., 25-30.
Overall length, 78 ft. 4 in.
Seating Capacity, 58.
Weight (light), 34 tons.
Weight (loaded), 38 tons.
Horse power, 153.
Maximum speed, 45 m.p.h.

The power bogies and control equipments, which have been supplied by the Drewry Car Company have Gardner 6L3, 153 h.p. Diesel engines, hydraulic couplings and epicyclic gearboxes and are identical with power bogies supplied by the same company for earlier railcars. The control equipments are arranged for multiple unit working of up to three cars.

Previous railcars using the same power bogies were designed to haul trailers.

However, experience has indicated that the power/weight ratio of these cars with trailers is too low for satisfactory operation and the articulated design was developed so that the power-weight ratio could be improved while at the same time the standard power unit could be retained.

The trailing bogies which were designed and manufactured in the Railway Workshops, are of a new all welded design which has been developed to provide greater riding comfort than the bogies on previous railcars. The new bogies have a six foot wheel base and are fitted with auxiliary rubber bearing springs and rubber pads under centre pivot and side bearers. These rubber pads insulate the body of the car from road shocks and together with the long type laminated side bearing springs on the axle boxes give the bogies excellent riding qualities. Roller bearing axle boxes are fitted throughout.

The bodies and underframes are supplied by the Commonwealth Engineering Co., Sydney. The framework of these bodies and underframes is of light steel welded construction and aluminium exterior panels are attached to the framework by poprivets. The interiors of the passengers' compartments are lined with flush maple panels. Special fire-proofed kapok insulating material equivalent in sound proofing and insulating qualities to 2 in. of cork is fitted in the roof, sides and ends of the cars, and in the partition between the engine compartment and the passenger compartment.

Extra insulation has also been provided in the floors of the passenger compartments and the underside of the floor has been sprayed with asbestos.

In all details the cars have been designed to give the maximum possible comfort to the passengers. Particular attention has been paid to the design of the seats, which have head rests, arm rests and reversible cushions. Ample leg room between seats has been provided.

Pressure ventilating and heating equipment is installed in the cars. This equipment provides a continuous supply of filtered air to the passenger compartments and, when required, the air can be heated by means of water from the engine cooling system, the heating of the air being thermostatically controlled to a maximum of 65F.

Continuous double fluorescent lights are fitted down the centre of the compartments. These lights have been designed to give an illumination of at least 10 foot candles on the reading plane in all seats.

The first two railcars with the 153 h.p. Drewry power bogies to be placed in service on the Tasmanian Railways were purchased in 1939. These railcars have proved to be very economical to run and since 1939 have each completed over 500,000 miles each per annum.

The new railcars will operate with a more favourable power/weight ratio, and it is anticipated that these cars will give even better service than the 1939 cars.

ERRATA

The following corrections should be made to locomotive news items in our last issue:

On page 5, the reference to dates in service of Tasmanian locos should not specify diesels; only the V class are diesels, the F's are steam.

On page 6, A6ET equipment was intended, not AGET.

On page 5, the number of Q.R. Garratts should be ten, not twelve.

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About Engines-

To handle increasing train loads economically, and to replace antiquated, low-powered steam locomotives, the Tasmanian Government Railways, in 1947, placed an order for ten diesel-electric locomotives with the English Electric Co. Ltd. These machines were to be of medium power and capable of working any type of traffic. Because of the deteriorating locomotive position, further orders were placed for these locomotives, ten in 1948, and twelve in 1949, making in all 32 locos on order.

The layout of these locomotives is that of a single diesel engine with end cabin mounted on a Bo-Bo (swivel truck) wheel arrangement. The diesel engine is an English Electric, 6-cylinder, 4-stroke, supercharged and developing 660 b.h.p. at 750 r.p.m. This is direct-coupled to a six-pole traction-type d.c. generator which supplies current to four axle-hung traction motors, spur geared to the road wheels.

The structural parts of the locomotive were designed by the Vulcan Foundry and for the first 20 units the underframes, bogies, and superstructure have been provided by Vulcan, while the remaining 12 locomotives will be wholly constructed by the English Electric Co. Ltd.

For supplying the ancillary equipment, an auxiliary generator is overhung the traction generator, the former providing energy for main generator field excitation, air compressor for the locomotive air brakes, supercharger blower motor, control circuits, lighting, and battery charging. The batteries are required for engine starting, this being achieved by motorising the traction generator.

Every care has been taken to give the enginemen unrestricted visibility and all-weather comfort. The cabins have duplicate controls for operation in either direction. It is intended that these locomotives will operate in single, double, or triple units, depending on the tractive effort required. Upon receipt in Tasmania, they will form the "X" class, receiving road numbers 1-32 inclusive.

It is interesting to note that, although orders for equipment have previously been fulfilled for this country, the Tasmanian order represents the first for complete diesel-electric locomotives from England.

Leading dimensions are:—

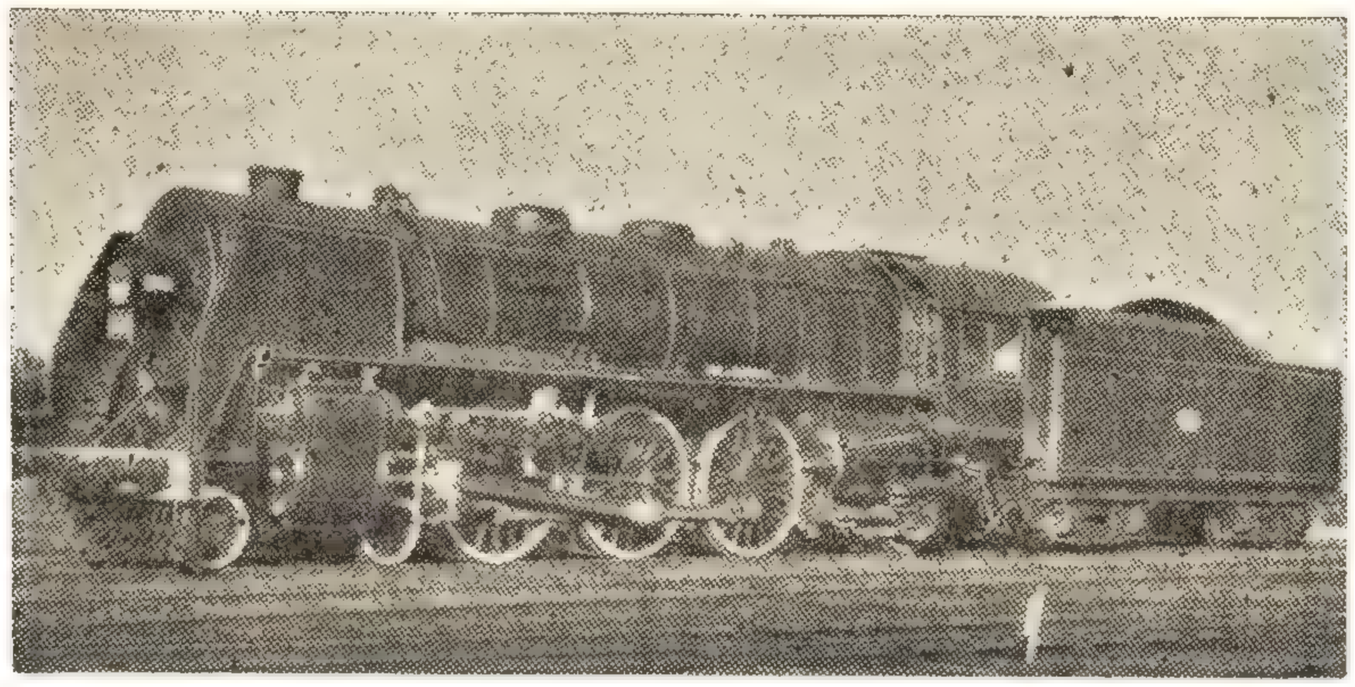
Engine power—660 b.h.p. at 750 r.p.m.

Length over buffers—36 ft. 8 in.

Total wheelbase—24 ft. 9 in.

Bogie wheelbase—8 ft. 3 in.

Wheel diameter—36½ in.



South Australian Railways' 4-6-2 No. 609 "Duke of Gloucester." Engines of this class were built by Armstrong-Whitworth Ltd., in 1926. Originally designated the "600" class, they are now known as "600c," following recent reboilering. (S.A.R. Official Photo.).

Gear ratio—67/16.

Maximum starting tractive effort—31,000 lb.

One-hour tractive effort—15,800 lb. at 9.2 m.p.h.

Continuous tractive effort—12,700 lb. at 13.7 m.p.h.

Maximum service speed—55 m.p.h.

Weight in working order—55 tons.

MORE NEW V.R. LOCOS
50 "X" Class Mikados

The Victorian Railways have placed an order with the Clyde Engineering Co., of Granville, New South Wales, for the construction of fifteen "X" class heavy 2-8-2 locomotives will be numbered 56 to 70 inclusive, making in all 44 units in the class.

The design has been modified slightly to bring it into line with current practice. "German" smoke deflectors, single window-cab and sheet steel cowcatcher are features of the new locomotives. The combined steam and sand dome mounted atop the boiler will be employed, and to eliminate maintenance trouble, the Franklin C-2 booster is to be omitted. Thus, in power, and for load rating, these locomotives will be identical with the C class.

V.R. LOCOMOTIVE ORDERS

To clarify the position, we present a statement of the motive power now on order for the Victorian Railways:—

70 R class passenger locomotives from North British Loco Ltd.

50 N class freight locomotives from North British Loco Ltd.

20 N class freight locomotives from Newport Shops.

50 J class freight locomotives from Vulcan Foundry.

15 X class freight locomotives from Clyde Eng. Co. Ltd.

17 diesel-electric road locomotives from Clyde Eng. Co. Ltd.

10 diesel-electric shunters from English Electric Co. Ltd.

17 electric road locomotives from English Electric Co. Ltd.

A total of 249 units. The diesel-electric order from Clyde is subject to dollar allocation for prime movers and traction equipment from the Electromotive Corp., La Grange, Ill., U.S.A.

W.A.G.R. WANTS DIESELS
Tenders Called for 45

The Western Australian Government Railways are calling tenders for the supply of 45 mainline diesel-electric locomotives for operation in waterless districts.

In addition, builders are being sought for eighteen diesel-mechanical locomotives for yard duties in Perth and Fremantle. It is understood that, for both these orders, two Japanese engineering firms having continental affiliations are interested.

PM CLASS IN TROUBLE

A speed limit of 40 m.p.h. has been placed on the new PM class locomotives, pending investigations into their effect on the track. Since these locomotives are for general traffic, their usefulness has not been seriously impaired. It has been revealed that the landed cost of each PM was £34,815; this includes an import duty of £7600 and, following the Federal Government's waiving of duties on imported rolling stock, a remission is being sought.

Several PM locomotives have been withdrawn from traffic to have their fireboxes modified to comply with the Australian Standard Boiler Code.

PR CLASS BOILERS

Under construction at Midland Junction Workshops are ten replacement boilers for PR class engines.

5/10

Rolling Stock Parade

Freight rolling stock on order for the Victorian Railways includes 1,500 vehicles from British manufacturers. Shown at left is one of an order for GY class 22-tonners by the Birmingham Carriage & Wagon Co. Ltd. Length is 22ft., width 9ft. Rolled steel disc wheels are fitted. (Courtesy Victorian Railways).

W.A.G.R. OIL BURNERS

Through the courtesy of the Chief Mechanical Engineer and the Secretary of the Railway Publicity Committee, we are able to publish details of oil-burning locomotives on the W.A.G.R.

Class	Date Fitted	Date Removed	Date Fitted	Date Removed
"ES"				
292	12/47	8/48	7/49	10/49
302	12/47	8/48	—	—
303	12/47	6/48	7/49	10/49
319	12/47	7/48	6/49	10/49
324	—	—	7/49	10/49
Class "FS"				
276	12/47	—	—	9/49
282	12/47	6/48	7/49	10/49
283	12/47	8/48	—	—
285	—	—	7/49	9/49
286	—	—	7/49	11/49
289	12/47	—	—	11/49
290	12/47	7/49	—	—
357	12/47	—	—	12/49
358	12/47	6/48	—	—
366	12/47	8/48	—	—
397	—	—	7/49	9/49
408	—	—	6/49	10/49
412	—	—	7/49	10/49
421	12/47	6/49	7/49	9/49
Class "PR"				
521	12/47	10/48	—	—
522	3/48	8/48	—	—
524	12/47	11/48	7/49	9/49
525	12/47	11/48	—	—
527	12/47	4/49	7/49	11/49
528	12/47	4/49	7/49	— (a)
529	12/47	5/48	11/48	6/49(b)
530	12/47	9/48	—	—
534	—	—	7/49	10/49
536	—	—	12/48	7/49

(a) Written off on 21/2/1950 after being damaged by fire at Kalgoorlie.
(b) Further fitted 7/49 and removed 10/49.

Class "ASG"

Converted to oil burners: 28 on 2/48, 31 on 2/48, 32 on 3/48, 44 on 2/48, and 64 on 3/48.

Nos. 28, 31 and 64 ASG are at present in workshops and will not operate again as oilburners.

SOUTH AUSTRALIAN RAILWAYS

New Freight Cars Wanted

Tenders are being called for 100 four-wheel cattle vans and 100 four-wheel sheep vans for the broad gauge system. In addition, twenty 25-ton topper trucks for the 3'6" gauge are being sought.

In each case tenders close on 28th September and require that vehicles be delivered to Islington Workshops.

New Type Crossing Gates

The S.A.R. have installed a new type of automatic level-crossing gate on the North line at Ovingham. These gates are similar in design to those in use in the U.S.A. and will be the first of this kind to be installed in Australia. If successful, this design of gate will be extensively installed upon electrification of the suburban lines. Torrens Road, Ovingham has been chosen as being particularly representative of level-crossings for it was extremely narrow and the installation coincides with the widening of the road by the Highways Dept. The installation of these gates will cost £2,000. The new gates consist of a single bar across the traffic side of the road on each side of the line, and are automatically lowered upon the

V.R. DEPOT SYMBOLS

All locomotives attached to the North Melbourne Depot now carry the depot symbol "NM" in place of "N." The former was the original symbol for this depot, but was changed to "N" before the late war.

N.S.W.R. GARRATTS

Details of the 4-8-4 + 4-8-4 Beyer Garratt locomotives now on order for heavy haulage on the secondary lines of the New South Wales Railways are as follows:—

Tractive effort at 85% b.p.—59,560 lb.
Total wheelbase—97 ft. 8 in.
Unit wheelbase—37 ft. 6 in.
Rigid wheelbase—14 ft. 9 in.
Cylinders (4)—19¼ in. x 26 in.
Boiler pressure—200 lb. per sq. in.
Coupled wheel diameter—55 in.
Roadworthy weight—248 tons.
Length over buffers—108 ft. 8 in.

New Engine

Engine No. 5803 underwent a trial run as "light engine" to Penrith and return on 6/7/50.

approach of a train. By blocking only half the road width, it is impossible for motorists to be trapped by the lowering of the gates. Two flashing lights and one steady light will operate on each side of the track during the lowering and raising of the booms.

Standard flashing lights operate for a minimum of ten seconds as a warning before the gates descend; the gates taking about 12 seconds to be lowered. Railway By-Laws will be amended to make it an offence to cross the tracks whilst the flashing lights are in operation.

The gates and equipment were manufactured by the Western Railroad Crossing Equipment Corporation of Chicago, Ill., U.S.A., and were brought into operation on 21st August last.

VICTORIAN BREVITIES

New Speakers at Spencer St.

A new public address system has been installed at Spencer Street Station, Melbourne. "Amplion" speakers are employed but, to date, the new system has not been brought into operation.

Concrete Sleepers

An order has been placed with a Sydney engineering firm for the supply of 100 precase sleepers. These are to be installed on a busy suburban line, and will be in the nature of an experiment. Cost is five times that of timber sleepers.

Gippsland Improvements

The 70ft. turntable at Traralgon is being provided with extra overhang clearance to allow X class locomotives to be turned whilst coupled to the tenders.

Duplication

The duplication between Drouin and Warragul was opened for traffic on 20th August last. Since 5th March the new up track has been in operation as a single line whilst the original track was relaid and several bridges reconstructed. The opening of the regarded line has eliminated the double heading of up coal trains between Warragul and Drouin, the bank engines now assisting coal trains between Yarragon and Warragul.

Big Overseas Steel Orders.

Orders have been placed abroad for 15,000 tons of rails and 20,000 tons of structural steel to cost £600,000 and £750,000 respectively. This is due to the inability of Australian manufacturers to supply these items required for maintenance and new works.

Houses Imported.

The Department has imported 1,000 pre-cut houses from England for the housing of staff, of which 750 are for British migrant families and 250 are for existing operating staff in need of accommodation. At present 22 of these houses have been erected at Sunshine, 18 at Westgarth, and 22 at Merlynston.

N.S.W.R. BREVITIES

CROOM, on the Illawarra line, was abolished as a platform for both passenger and freight traffic, as from 1/6/50.

URANAGONG, on The Rock-Oaklands line, has been closed as from 18/5/50, and the passenger platform has been removed.

MAIMURA, on the Demondrille-Blayney line, has been closed as a booking station as from 24/5/50, and is now worked under unattended conditions.

New Diesel.

Two-unit diesel train, motor 610 and trailer 710, ran a trial trip from Chullora Shops to Hawkesbury River and return, on 2/8/50.

THINGS TO COME.

Scheduled for early appearance in "Railways in Australia" are many interesting articles, among which are:

HOLIDAY BY RAIL, by C. Einsiedel—a fascinating account of railfan ramblings in New South Wales.

A THEME FOR YOUR MODEL RAILROAD, by K. N. Lowry—another helpful screed by Australia's master of ¼ in. scale.

THE AUSTRALIND — Australia's crack narrow-gauge train.

N.M.R.A. STANDARDS—details of these essential guides to good modelling.

Also, further instalments of current articles by popular writers.

TIMING THE RED—the fascinating art of train timing applied to the famous Newcastle Express. By Ken Winney.

TOO MUCH OR NOT ENOUGH?

In recent weeks we have received comments from many readers on the new set-up of this magazine. Most have been complimentary, which is probably more than we deserve, but there have been suggestions of "too much about trams" or "too much model stuff."

Well, railfans, the cold, hard facts are that you are outnumbered by the tramway enthusiasts as far as subscriptions go. Advertising—a major source of revenue—is almost exclusively from model firms.

In fact, railfans are getting more than their share of the magazine, from a financial viewpoint, and we cannot ignore financial considerations.

Many railfans do not subscribe to "Railways in Australia." If you know such a miscreant, persuade him to take out a subscription now and help us to give you what you want.

BACK NUMBERS

We can still supply copies of all issues from the second (August, 1948) to that for December, 1949, at 1/- per copy, or 15/- the set of 17 copies (American prices, 15 cents and 2 dollars, respectively), and from February, 1950, to the present at 1/3 per copy (20 cents).

BOOK REVIEW

THE McINTOSH LOCOMOTIVES
Of the Caledonian Railway
By A. B. Macleod
Ian Allan Ltd., London

John Farquharson McIntosh was undoubtedly the greatest of the Locomotive Superintendents of the Caledonian Railway—a line justly famed for the beauty and efficiency of its motive power. In this little book, Mr. Macleod describes fully each class of engine, as well as subsequent rebuilds and renumbering.

The book itself is well arranged and the illustrations clear.

(48 pp., 8½ in. x 5½ in.—our copy, Meadmore Models, 4/9.)

MODEL RAILWAY ENCYCLOPEDIA
By Ernest F. Carter
(Burke Publishing Co. Ltd., London.)

Not to be confused with an equally good but entirely different publication of similar title, this new work by a leading English modeller is truly encyclopedic in scope. Whilst we do not see eye-to-eye with Mr. Carter on some points, the all-embracing detail and painstakingly clear explanation of every aspect of the hobby is most attractive. In addition to numerous illustrations and diagrams, there is a surprise in the shape of a number of blue prints at the back of the book.

(496 pp., 8½ in. x 5½ in., hard cover. Our copy, McGill's Agency, 23/6.)

WATTLE PARK
FOR THE FINEST SPORTING 9-HOLE GOLF COURSE IN MELBOURNE. TRAM FROM BATMAN AVE. (ROUTE 70)

5/2

W.A. GOVT. RAILWAYS
INSTITUTE MAGAZINE
Rail News from Western Australia and Overseas
Interesting Articles
Household Hints — Humour
OF INTEREST TO THE WHOLE FAMILY
Published Monthly
Subscription 7/- yearly, post free
W.A.G.R. & T. Institute
Wellington St.,
PERTH, W.A.

GEELONG ——

A Provincial Rail Centre

BY GUY BAKEWELL

(Concluded)

The service from Geelong to Ballarat consisted of two trains—a morning and evening one—each way daily. Some fairly steep grades are encountered on this line. There was also a daily service between Geelong and Ararat, via Maroona. This latter route branches from the Geelong-Ballarat line at Gheringhap and was constructed many years afterwards as a cross-country line. Both routes are of considerable value, as they link Geelong with Ararat and Ballarat, each of which are places of railway importance on the main Melbourne-Adelaide line. Goods traffic from South Australia is often routed from Ararat via Geelong to save congestion on the interstate track and at busy times the "Overland" Express to and from Adelaide can be diverted via Geelong instead of travelling over the main line through Bacchus Marsh. It was by this route that the first Melbourne-Adelaide Express travelled in 1887 before the present more direct way was completed.

--The Up "Flyer" leaving Geelong for Melbourne, headed by A2 4-6-0, No. 901. (Guy Bakewell Photo.).

Diverted traffic need not necessarily go into Geelong itself, but can pass over an avoiding line known as the North Geelong Loop. This loop bears away from the main track just before coming into the North Geelong marshalling yards and curves round in a westerly direction to the Ballarat branch line.

As regards the other branch lines referred to previously that to Queenscliff leaves the main line just after passing the South Geelong station and swings away eastwards before turning south to its terminus at the mouth of Port Phillip Bay. In normal times the Queenscliff line is subject to such severe motor competition that it carries only goods traffic. The Wensleydale branch does not actually diverge from the main Geelong-Warrnambool line until some miles south at Moriac. The Fyansford branch is a purely industrial one to the cement works.

There are not many railway tunnels in Victoria, but Geelong possesses one of them. All trains travelling south pass into a tunnel about half a mile long up a 1 in 50 grade.

The Geelong station is of the old type with overhead roof covering several platforms. Facing north towards Melbourne the administrative offices, refreshment rooms, goods sheds, etc., are on the right of the main departure platform for Melbourne, and through trains, while other platforms to the left of these are mostly used for branch line trains. Goods and shunting yards are on the western side and northern end of the station but the main marshalling yards are at North Geelong about two miles distant and are extensive. Near here is the round-house for accommodating the locomotives "stabled" at Geelong.

The railways are called on to handle a large wheat traffic in the season. There are several large Grain Elevators and extensive tracks alongside the silos permit the arrival and departure of long wheat trains.

Most classes of standard Victorian Railway locomotives may be seen at or around Geelong. Those most commonly used on passenger trains are generally of the "A2" class (4-6-0 type) or the "D" class, a lighter engine of the same type. Goods traffic is handled by the "A2" class and sometimes by the "K" and "N" classes, having a 2-8-0 and 2-8-2 wheel arrangement respectively. Heavier goods traffic is either double-headed with these classes or worked with one of the more powerful "C" class (2-8-0 type). With the exception of the "D" class these engines have now all been equipped with modified front ends. All except the "C" and "D" classes have been fitted with smoke deflectors.

"C" class locomotives with modified front ends have shown particularly good results on the Geelong-Ararat goods schedules working heavy interstate traffic.

As well as the main line locomotives to be seen at Geelong are those performing duties of a humbler nature in the yards or on the wharf sidings on the Bay which are no less interesting to the railwayist. They consist of the "Y" class (0-6-0 type) tender engine and the two classes of tank engines "D4" (4-6-2 type) and "E" (0-6-2 type).

These shunting engines work round the Geelong yards and those at North and South Geelong and on the wharf sidings. The latter are connected with the main yards by a short stretch of line curving in an easterly direction through a cutting in the vicinity of the Geelong station.

Such is a brief account of an interesting railway centre. From time to time schemes for further electrification of the Victorian Railways are mooted. Some day probably the Melbourne-Geelong line will be electrified.

ELECTRIC TRACTION

TRAMWAY — TROLLEY BUS — ELECTRIC RAIL

Formerly published separately as "Tram Tracks"

HACKNEY

PITY THE POOR PUBLIC

A Change for the Worse

With conditions throughout the world disturbed to such an extent by war and its aftermath, most people have grown accustomed to the acceptance of inconveniences of one kind or another which they would not have tolerated in pre-war days. Particularly is this so wherever the supply of materials is a problem. Often the difficulties are genuine, and there is little which can be done to alleviate them. There does seem, however, to be in some quarters a tendency to disregard public convenience entirely in response to other pressure, whether from vested interests, from trade unions, from politicians, or from administrative or constructional difficulties.

A recent example of this sort of thing is the abruptly announced decision of the Department of Road Transport and Railways in New South Wales to close the city section of its busiest tramway line—the King Street route from Erskine Street to Watson's Bay; the city terminus of this line is to be at a new terminal loop in Queen's Square. The reason given is that the impending closure of the upper end of Martin Place (the next parallel thoroughfare to the north) in connection with the construction of a new underground railway station would so increase the traffic using King Street that insuperable congestion would be created. This premise we do not accept entirely—cross city traffic in Martin Place has never approached that of other parallel streets which are not dead ends—and, in any case, the removal of the 'bus terminal there has eased considerably what pressure there was.

The main point, however, is that very large numbers of people are going to be inconvenienced for the sake of the comparatively few who need to drive cars across this part of the city. The Minister for Transport (Mr. Sheehan) excuses the action on the grounds that tram passengers will be inconvenienced no more than railway passengers who alight at St. James station—a singularly futile statement which overlooks both the fact that one of the virtues of trams is that they take people where they want to go in the city and not half a mile away from it and that Watson's Bay line tram travellers will have to pay the same fare for up to one mile less travel. As for those passengers who are unfortunate enough to require to transfer to, say, the George Street tram to reach their place of employment, they presumably will have either to walk more than three blocks or make a further transfer to the "skeleton" bus service which is to be operated to the former tram terminus.

All this aside, it would not have been impossible to have made other arrangements—a link with the Bellevue Hill route at the foot of William Street, and a short spur via Park Street (which is very [illegible] the Town Hall, which would have catered for many [illegible] sengers. In fact, this is a link which should be made anyway, irrespective of any changes in King Street itself.

Space does not permit of thorough consideration of the problem here, but it is obvious that you and I, and the rest of the travelling populace, receive the usual amount of consideration given to us in these matters!

Probably the most distinctive feature of Australian tramway practice is the drop centre bogie cars, standard on all principal systems, and found to some extent in most smaller cities. No. 264 is an F1 class car of the Municipal Tramways Trust, Adelaide, S.A. Fitted with remote control, these large cars scale over 20 tons and seat . Ample ingress and egress is provided in the drop centre which has 3-and-2 transverse seating and full bulkheads with narrow doors—both features being exclusive to Adelaide. (Courtesy "Outdoor Advertising news.")

UPSIDE DOWN

Inversion of the illustration of the P.C.C. truck in our last issue is regretted. (Confidentially, our printer, who didn't know about track brakes, couldn't see how a tram could run with the block on the rails!)

LATE NEWS.

Sydney's new car, No. 1988, attached to Ultimo Depot, and operates on Canterbury - Darling Street Wharf route.

Reported Clovelly route (Sydney) to be closed.

Melbourne P.C.C. No. 980 in passenger service on Route 69 (St. Kilda Beach-Kew, Cotham Road).

Resilient - wheeled trucks used under Sydney R.I. No. 1958 returned to Brisbane. Reported several sets of similar trucks on order, modified to suit Sydney conditions.

Manager, Commonwealth Engineering Co., promises 100 new R.I. class cars on the road by May, 1951 (250 are on order).

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A STORM-CENTRE AGAIN — SYDNEY'S R1 CLASS
(Official photo.)

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

NEW SYDNEY TRAMS
First in Service

No. 1988, the first of a fleet of 250 new R1 class tramcars was handed over to the Department of Road Transport and Tramways by the builders, Commonwealth Engineering Co. Ltd., on 5/9/50. The car

The new cars are identical in appearance with the previous cars of the R1 class, built some years before the war, and it is believed that few mechanical differences exist, a fact which has drawn considerable criticism from newspapers and elsewhere.

KING STREET CHANGES
Queen's Square Terminal

Because of the impending closure to motor traffic of the upper end of Martin Place, owing to heavy construction work on the new underground station, it has been decided to terminate all King Street trams at a new balloon loop now being built at Queen's Square. A skeleton bus service will operate from that point to Erskine Street, the present terminus of the trams.

A storm of protests followed the announcement of this decision, which it is hoped to implement by Christmas, with the aid of trackmen lent from the Railway Department. Queen's Square is already a most congested area, and the enormous number of passengers which will be debouched there under the new scheme presents a problem. It will be remembered that a similar idea was abandoned last year because of public protests. Cost of the loop will be £9,000.

LATROBE ST. READY
New Melbourne Route.

The new Latrobe Street line in Melbourne is to be opened for traffic on 14/10/50; it is reported that the basic service will be from Spencer Street to Kew Depot, with East and West Preston, and Mont Albert cars also during peak hours.

The last crossing to be installed was that at the Swanston Street intersection, on 27/8/50. The last trackwork to be placed in position was the reverse curve from Latrobe Street to Victoria Parade. Rail Grinder No. 2 has been in action, to the considerable interest of lunch-hour crowds.

The Spencer Street terminus is purely temporary until completion of the connecting line to the present Spencer Street route, and construction of a terminal spur in Spencer Street to Dudley Street for Hawthorn and North Balwyn routes.

MELBOURNE, VIC. (M. & M.T.B.):

Passenger service on the 1-mile Holden Street line, between Lygon Street and St. George's Road, ceased with the last tram on 2/9/50. The service is now operated by a 20-passenger M. & M.T.B. bus. The route will still be used for depot and special workings. An historical survey of the line appeared in the June issue of R. in A. It was operated by bus on previous occasion, from 25/9/39 to 21/7/41. The last car was G class, No. 174 (formerly R class, and built in 1920).

Rail Grinder No. 1 was transferred from the main system to Footscray on 14/7/50, and, on the same day, No. 169 (A class) was returned. The rear entrance of this car was subsequently closed for all-night service prior to 21/8/50. The sojourn at Foots ray of Scrubber Car, No. 8, extended from 14/11/49 to 13/2/50. A class No. 165 was returned to the main system on 14/11/49 (the A class cars are long-wheelbase, single-truck cars, built in 1916 for the Melbourne, Brunswick and Coburg Tramways Trust).

Latest SW6 class cars to enter service is (as we go to press) No. 963 (to Essendon Depot). No. 964 is reported ready for use, and twelve more are in various stages of construction; with materials in good supply, it is hoped to maintain the increased construction rate.

The PCC car (No. 980) has been seen in passenger service on Route 69 (St. Kilda Beach-Kew, Cotham Road), but this seems to have been experimental.

It is understood that the Board has authorised the fitting of weed-killer apparatus to No. 7 (Flusher), and this should be ready for use by now; it is intended for operation on reserved track sections.

L class car, No. 104, has received new fabricated steel bolsters, and is back in service; No. 103 is being fitted similarly.

A new and improved system of signal lights for the single line, Preston Overbridge, are now in use. They replace the older "Forest City" type. This equipment will gradually replace the lights on other single line sections, Wattle Park and East Coburg being first on the list. Flashing light signals to protect the egress of trams from Malvern Depot into Glenferrie Road have been installed.

Effective from 23/7/50, the new, improved (since the strike earlier this year) all-night schedules allow an hourly service on all night services except Toorak, East Malvern and North Richmond-St. Kilda Beach, which, so far, have not been restored. The East Preston route, beyond Thornbury, is at present served by the extension of the Northcote all-night bus. The South Mel-

bourne and St. Kilda Beach service is now combined with the Carnegie all-night route; the Carnegie cars running via South Melbourne, St. Kilda Beach, Carlisle Street, Brighton Road and Elsternwick. This 9-mile route takes 57 minutes.

Numbered discs for tram stops on an experimental route are being made, and will be placed into position as soon as possible. The name of the route has not been divulged. A deputation from the Port Melbourne City Council, seeking a tram service to Fisherman's Bend have service to Fishermen's Bend have been told that the existing bus service will be retained for some time. The traffic does not warrant the introduction of trams, the Board claims.

Conversion of the "panhandle" type controllers (Type E.E.Q2RC) is being carried out steadily. Originally 40 cars had this equipment—38 W5 class cars, one SW2 (No. 436), and one SW6 (No. 850).

MELBOURNE (V.R. Tramways):

Overhauling of the four bogie cars on the Black Rock route is nearing completion, and it is expected that relief car No. 43 will be returned to the St. Kilda-Brighton line shortly.

It is now four years since the Transport Regulation Board agreed that buses be substituted for the Black Rock trams, but Government indecision, coupled with the many changes of Government in that period, has caused the trams to continue in operation. The Sandringham City Council and residents are deeply concerned at the state of the track and roadway, and serious accidents are feared.

The line has run at a profit since 1942.

LAUNCESTON—Tasmania:

A short part of the end of the Carr Villa route has been closed during August, and rails lifted to enable the concreting of the road for the new trolleybuses. Eventually, the trams will stop at the Depot and trolleybuses will be inaugurated beyond. While the roadway beyond Punchbowl Road is being prepared for the trolleybuses, trams will stop at that point (½ mile beyond the Depot), and diesels will run a temporary service. To enable the diesels to be available, the trams will be restored for a while on the Basin Road service.

FREMANTLE—W.A.:

Recent scrappings of F.M.T. & F.L.B. stock include Nos. 1, 19 and 23. 1 and 19 are S.T. California Combinations, 1 being an original 1905 car, and 19 arriving in 1909. They have 2 x 34 h.p. motors and are 30 ft. long. 23 was originally a bogie, open Toastrack built by the Melville Road Board for their lines at East Fremantle and Point Walter. It was built in 1913. In 1926 the stock and cars of the M.R.B. were acquired by the F.M.T., and the bogie Toastrack was converted to an end-loading saloon vehicle. It seated 64 passengers, had 4 x 35 h.p. motors, and weighed 19 tons! There are now only eleven Combination cars left in service, with all the bogie stock except 23.

PERTH—W.A.:

The last car to operate on the bustituted Como route was "A" class No. 114, which terminated its run at Labouchere Street corner. The closure of the Victoria Park service has not yet taken place, although it was expected to take place during August.

WANGANUI—N.Z.:

On 20/5/50, the Aramoho route beyond Calver's Corner was closed and a local bus service inaugurated, with no trams on the whole route on Sundays. It is understood that the remainder of the route from the City was closed during the first week in July. The first section to Aramoho Station was opened on 11/2/08, extended to Quick Avenue on 15/4/15, and reaching the terminus (4.7 m.) on 14/9/23. Cars 1 and 16 have been withdrawn from service. It will be remembered that the city's transport services will eventually be taken over by a private enterprise—Greyhound Buses Ltd. The annual report for the year ending 31/3/50 shows that working expenses exceeded revenue by £5,000.

WELLINGTON—N.Z.:

The last of a batch of trams ordered as early as 1940 has been completed. These will be the last trams built for the W.C.C.T. They are Nos. 257-260, steel-bodied, end-loading saloons, with upholstered seats, and M.T. trucks. Their construction took place at the Corporation's Kilburnie Workshops.

OVERSEAS NEWS:

Twin-City Rapid Transit Co., operating tramway services in Minneapolis-St. Paul in the U.S.A., has introduced radio broadcasts in their vehicles. In the French port of Marseilles, a new type of modern tram was introduced during the middle of 1949. It is an articulated job, 21 metres long, carrying 175 passengers, and capable of speeds up to 50 Km.p.h. The unit is double-ended and the bodies are end-loading saloons. Local policy is to retain and develop the main lines. The route mileage is 175 Km. and the gauge is standard.

The Italian city of Turin has 20 new FIAT 3100-type cars of 44 ft. 9 in. in length, with 4 x 45 h.p. motors. Electrical equipment is supplied by the Milan General Electric, and the car can operate up to 31 m.p.h. The body has a centre room and two end doors.

ANOTHER "PRESTON"

The Dick Kerr Factory

The Presion works of the English Electric Company were previously operated by Dick Kerr & Co., one of the four firms which combined to form "English Electric" in 1918.

Even before 1880, Dick Kerr's enjoyed the reputation of being the first British firm of engineering contractors to specialize in tramway and light railway equipment, and, in 1887, constructed the first electric conduit tramway, from Gravesend to Northfleet.

The Preston works were purchased by the English Electric Co. in 1897. Contracts completed since that date include railway electrification schemes in many parts of the world, and in Great Britain. The first main-line electrification—on the Liverpool-Southport line—was carried out in 1902.

(Contributed by a reader.)

ALLOCATION OF CARS TO DEPOTS.

Sydney, N.S.W., Tramways.

(Peak hour requirements in brackets.)

Newtown: R-11 (9)†, P-8 (8), OP-4 (4), O-10 (10)*. O (d)-12 (9)*, LP-43 (12) (23 stored).
Tempe: P-27 (21), O-31 (23)*, LP-30 (20) (17 stored).
North Sydney: R-50 (40)†, O-66 (56), O (d)-20 (16), K-2 (2), E-4 (4).
Rozelle: P-24 (19), O-12b (99), O (d)-12 (11), LP-28 (all stored).
Waverley: R-28 (22), PR-1 (0), P-39 (32), O-136 (109).
Ultimo: R1-1 (1), R-24 (21), P-26 (20), OP-2 (2), OP (d)-1 (0) O-156 (126), O (d)-2 (0). LP-10 (all stored).
Dowling Street: PR1-4 (4), P-129 (102), OP-2 (2), OP (d)-1 (0), O-156 (126), O (d)-3 (0), LP-26 (all stored).
Fort Macquarie: R1-9, R-82 (73 required).
Rushcutter's Bay: R1-40 (37).

Notes:

†Additional R's reported being transferred from North Sydney to Newtown.

*Reported more O's to be transferred to Newtown and Tempe.

(d) Direct control.

(The figures given above are the latest available but may be subject to change.)

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THE TROLLEY-BUS STOP

DUNEDIN—N.Z.:

The first of the vehicles for the tramway conversion is completed and has undergone preliminary tests on the Wellington System. The overhead is completed on the Opoho route from the city.

NEW PLYMOUTH—N.Z.:

Unable to dispose of their vehicles, the Borough Council has finally decided to go ahead with the Westown route, and the overhead is being erected. These buses will replace the tram service operated by the Birney cars.

LAUNCESTON—Tasmania:

The first of the 30 trolleybuses was tried out on the Hobart system during August, and now has been delivered to the L.M.T. The Carr Villa tram route is now being gradually converted for the initial trolleybus service.

PERTH—W.A.:

The first of the fifty new trolleybuses for the W.A.G.T. (No. 41), and also No. 51 of the same group, are now in service. Bodies for 41-50 are of N.S.W. manufacture, whilst the bodies for Nos. 51-90 are by Bolton's Ltd., in Perth. It is understood that No. 52 will be in operation by the time this issue leaves the press. Work has been completed on the new short branch off the Claremont route to serve the Royal Showgrounds. This route will turn north up Vaucluse Street, and thence west along Gugeri Street, where a loop is placed abutting the railway line. The Loch Street turning circle will be abolished, and buses using that circle will now use the Showground loop instead.

BRISBANE NEWS

A.E.T.A. Outing.

A group of Brisbane members held the first organized A.E.T.A. outing in that city recently, when an afternoon was spent in car-riding.

WEDDING BELLS

Most recent A.E.T.A. wedding was that of popular Melbourne member Sam Serman, with Miss Geraldine Baker. Somehow, Sam found time to look over interstate tramways during the honeymoon!

BIRNEY "SAFETY" CARS
In Australia

By Wal. Jack.

Eight four-wheeled Birney "Safety" tramcars were introduced into this country from the U.S.A. during 1924-5, Geelong and Melbourne getting two each, and Adelaide four.

The Melbourne & Metropolitan Tramways Board was first in the field, with Nos. 217-8. The former was built by J. G. Brill, and the latter by the St. Louis Car Co. They are classed "X." Records show that No. 217 entered service on 9/6/24, running on the Power Street line in connection with the Richmond cable trams at Hawthorn Bridge, and the Burwood-Wattle Park electric cars near the Hawthorn Tram Depot. No. 218 first appeared as a revenue-earner on 10/6/24. When first placed in service, they had two trolley poles and cord retrievers, but, on 19/9/24, No. 217 was fitted with a bow collector, No. 218 being so fitted on the following day. It is not known when the bows were removed and replaced by the present single trolley pole. Both Birneys are now usually stabled at Glenhuntly Depot, and work between Elsternwick and Point Ormond, as well as on all-night services.

Geelong numbered the two Birneys as 14 and 15, the first going into service on 27/8/24, and the second on 29/9/24; both were used on the Moorabool Street line to South Geelong. These cars also had two trolley poles and cord retrievers, and were painted middle bronze green and lemon chrome, and were manufactured by Brill. The last time the writer saw the two poles and retrievers on the cars was on the eve of Easter, 1936; shortly afterwards, they were converted to single poles. The seating is different from other Birney cars, the Geelong cars having longitudinal seating in place of the usual "tip-over" cross seats.

Adelaide received her four Birney cars on 1/9/25; they were numbered 301-4, and classed "G." Nos. 301-2 entered service on 16/12/25, 303 on 21/12/25, and 304 on 26/12/25. They were used on the Port Adelaide system. These four were also by Brill, but had only a single trolley pole when they arrived. During their life on the Port lines, they amassed considerable mileages (see list).

Late in 1935, they were sold to the State Electricity Commission of Victoria for use at Geelong, and arrived there as follows: 303 on 17/1/36, renumbered 27; 304 on 24/1/36 (28); 302 on 6/2/36 (29); 301 on 30/1/36 (30). The first went into service shortly after Easter, 1936. During the war years, the "Yankees" were fitted with cab ventilators above the front window shields, and, apart from a few minor alterations, no other rebuilding has been done.

In 1947 it was decided to transfer all the S.E.C. Birneys to Bendigo, and No. 30 was the first to go (on 20/5/47). Others followed as under: 29 (28/5/47), 28 (9/9/47), 27 (16/12/47), 15 (11/8/48), 14 (16/6/49). No. 14 was renumbered 11 on the Bendigo system, but the others retain their Geelong numbers.

Mileages.

Mileage of each Australian Birney car is as follows:—217 (597,766), 218 (689,148), to 30/5/50; 11 (416,863), to 6/49; 15 (399,578), to 8/48; 27 (403,371—200,598 in Adelaide), to 1947; 28 (388,248—203,648 in Adelaide), to 9/47; 29 (383,884—195,522 in Adelaide), to 5/47; 30 (381,572—185,785 in Adelaide), to 5/47.

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DATA SUPPLIED BY L.A.CLARK

RED AND GREEN

Destination rolls of the type shown above were in use at one time on all government tramways in New South Wales, also on the M.T.T. system at Adelaide, S.A., and in Dunedin, New Zealand.

Their use is now confined to Sydney, N.S.W., but many enthusiasts continue to find interest in these attractive sidelights of tramway operations.

For such people our good friend, Mr. L. A. Clark, of 181 George Street, Parramatta, N.S.W., has prepared miniature replicas in full colour. Virtually all rolls, including many long out of use, are available, and prices are very moderate, considering the time and careful work involved.

We ourselves are proud to possess specimens of Mr. Clark's work. Latest to be added to Mr. Clark's list is the little-known coloured roll for the Ashfield-Burwood lines, which was not used for any great length of time.

BROKEN HILL TRAMWAYS

The Editor,
Railways in Australia,
Dear Sir,

In respect of the map of Broken Hill tramways in the May issue: you have Patton Street instead of Gypsum Street. Gypsum Street starts at Burke loop and runs right through to the bottom of South Hill. The area where you have Patton Street is known as Alma; actually Alma is South B.H. There was no "ALMA," the destination being "SOUTH B.H.", and where you have South B.H., it should read Patton Street. You show two triangle loops; the one at the corner of Bismuth and Wills Streets is definitely correct, but the one at Oxide Street is something of a query; I am not definite on this point as yet. Where you have Bismuth Street should read Wills Street; actually Bismuth Street is that leading from the triangle junction to Mica Street. The tram line did not run in Mica Street, but ran parallel with it on vacant land. I have been informed that there were no passenger services on the section to Crystal Street Station, as this line was used for working purposes such as obtaining ballast, etc. There was a shuttle service on the West B.H. line to Argent Street. Other services were Murton Street to South B.H., and East B.H. to Burke. You are wrong in stating that Gossan Street was the depot, as the latter was off Wills Street, about ¼-mile further on.

Actually, there was no loop for Sports Ground (on the East B.H. line), but a short section of track, about a block in length, in Silver Street. On football days, etc., at Jubilee Oval, the specials would have to traverse the full length of the East route and return to the intersection of Silver and Blende Streets to shunt back on to the spur, which held about two motors and six or seven cars.—Yours, etc.,

KEN MAGOR.

Hamilton, N.S.W.

EDITOR'S NOTE:—

We greatly regret the publication of incorrect data in respect of Broken Hill tramways. The information used in the article was obtained from several sources, all of which we had understood to be reliable. Mr. Magor, however, was for some years a resident of Broken Hill, having driven buses in that city, and had first-hand knowledge of the tramway system.

A dashing young driver named Bill
Drove recklessly down a steep hill.
Said he: "I'm renowned
For covering ground."
But, alas, now the ground covers Bill.

THE AUSTRALASIAN RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY
(Founded 1933)

AFFILIATIONS—The New Zealand Railway and Locomotive Society.
The Australian Electric Traction Association.
The Light Railway Transport League (London).

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The Society holds its Sydney meetings at the Railway Institute, Devonshire

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MEETINGS

Street, Sydney, on the second Tuesday in each month. All visitors are welcome. In Melbourne, the Society's meetings are held at the Railway Institute, Flinders Street, Melbourne, on the fourth Thursday in the month. All visitors are welcome.

FINANCIAL

The subscription rates are fixed at 21/- per annum, which includes the Society's printed Bulletin. Subscriptions are payable in advance. Members in Victoria, South Australia, Western Australia or Tasmania should remit to Victorian Treasurer, and all other members to the General Treasurer.

GENERAL

Back numbers of the Bulletin are still available, and members interested should write to Mr. G. C. Taylor.

Communications in connection with the Bulletin should be sent to Mr. M. A. Park, who will be pleased to receive articles or notes on railway affairs, both historical and current, which might be suited for insertion in the Bulletin.

INTERSTATE REPRESENTATIVES

In addition to the Victorian Branch, the Society is represented in South Australia and Tasmania by the undermentioned members, who are official representatives in their respective States:—

SOUTH AUSTRALIA: Mr. O. Thomas, 31 Torrens Rd., Hillside, S.A.
TASMANIA: Mr. K. Flood, 140 Wellington St., Launceston, Tas.

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HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

3 Electric Trains in Spectacular Crash

At approximately 8.40 a.m. on Friday, 28th July last, a collision involving three multiple-unit trains occurred at approximately 8.60 miles, between Roseville and Lindfield on the North Shore line of the N.S.W.R. (Sydney suburban area).

Run 108 (Hornsby via Strathfield, to Hornsby via North Shore line) was standing at the Lindfield down accept signal SH 8.73, which was at danger. The following train, run 45 (Liverpool to Hornsby) left Roseville at 8.37 a.m., and was stopped by automatic signal 8.33 at the Hornsby end of Roseville platform. No. 45 was tripped and worked past the signal at danger under the regulations governing the passing of automatic signals at stop. The distance from signal SH 8.33 to the point of collision was approximately 1,600 feet.

The driver of run 45 was not able to stop his train short of the standing train, 108. Consequently, there was a rear-end collision with the following result: The 6th, 7th, and 8th cars of 108 were telescoped, each for about three-quarters of their length.

In 108, car 7 overrode the underframe of car 6 (wooden trailer T4221), while car 8 came to rest with its frame upon that of car 7, with car 7's roof between its own roof and floor. The wreckage of these three cars was foul of the up line, and within a matter of seconds, run 123 (Lindfield to Liverpool) came at a considerable speed around the curve and before it could be stopped, it had passed the wreckage by about 2¼ car lengths; resulting in the right-hand sides of the first and second cars being completely torn off.

Traffic on the North Shore line was completely suspended until the line was cleared shortly after midnight. The undamaged cars on the Hornsby end of trains 108 and 123 were removed to Lindfield, and line clearing was handled by the Craven accident crane and the breakdown train hauled by a 32 class locomotive.

The resulting injuries were very small, as all three trains were practically empty. Only 12 persons were involved, of whom two were admitted to hospital. No train crew member was injured.

After the collision, the overhead became disarranged and several short-circuit fires took place causing much smoke in the debris.

According to press reports, run 123 departed from Lindfield off a platform not its customary platform, thus leaving behind many city-bound passengers and greatly reducing casualties.

Shortly after the accident an emergency bus service was instituted between North Sydney and Gordon, with, to quote the press, "more than ten buses." For the evening peak, rail traffic was extended to Chatswood, and between Chatswood and Gordon (3 miles) traffic was handled by 22 buses.

It should be emphasised that this account was based on "informed observations" and is not official.

An official inquiry was held as to the cause of the collision.

CAR WASHING PLANT For V.R. Suburban Trains.

Following on the recommendations of the Elliot Report, a mechanical car washing plant is to be installed on the city side of Jolimont Workshops for cleaning the exterior of suburban cars. Special provision is made for the difference in width of swing door and sliding door stock and the possible effects that door handles and grab rails may have. It is most likely that the washing plant will be on one of the roads leading from the Inspection Shop.

Meanwhile private cleaning contractors have been engaged for car cleaning. Because of the shortage of cleaning staff the condition of suburban cars has become deplorable.

NEW STEAM RAILCARS.

Steam railcars are usually considered something of a back number these days, but they are still being used extensively in some countries. Egypt is now taking delivery of ten three-car articulated steam railcar sets seating 187 passengers each. Builders are Sentinel (Shrewsbury) Ltd., and the Metropolitan Cammell Carriage & Wagon Co. Ltd., for the motive power and bodywork, running gear, etc., respectively.

Wynyard Station is probably the most austere on the Sydney underground lines of the N.S.W. Railways. The advertising signs lend a brighter touch to the base steel girders on the Upper Level. Trams use the adjoining platforms, divided from the railway by a fence. (Courtesy "Outdoor Advertising News.")

A.E.T.A. NOTES

MELBOURNE BRANCH
6th ANNUAL REPORT

The sixth year of the Australian Electric Traction Association has proved itself to be another year of interest and activity. Our name is now recognized by all Australian electric tramways. In fact, a number of tramways have sent enquiring letters to the Association. There is no doubt that the Association is now in a position to put its case before the people at any time. It is pleasing to know that our statements and opinions are now sought and given due consideration, and not simply consigned to the waste paper basket. Both commercial and national radio stations have approached the Association in the past for news items, and the Melbourne press has done likewise. It is with this recent increase in recognition from outside bodies that the A.E.T.A. Council has appointed a Public Relations Officer. This Officer has been given full authority to make statements to the press, etc., without immediate reference to the Council. It need not be said that Mr. Jack Richardson was appointed because of his natural ability to fill the position.

Activities.

Looking back over the past twelve months, it will be seen that it has been quite a full year. As well as the usual monthly meetings, at which a variety of addresses were given, Mr. J. Stranger gave a series of lectures on the basic principles of tramways and tramway operation. This venture proved very successful, although the attendance was small. The lectures were designed to introduce newcomers in the Association to general tramway practice.

Three special trips were run during the year and two social outings in the form of hikes. The diesel rail-car trip to Bendigo proved to be a huge success and although a special tram car was not available in that city, the system was thoroughly investigated; of course, a visit was paid to the Depot. The two trips in the P.C.C. car (No. 980) proved to be the highlight of the year, and perhaps the highlight of our six years' existence. The introduction of the true P.C.C. equipment to Australia is a matter of no small importance. It may be stated that we, the Melbourne members, were honoured to have the use of car No. 980, at such a time in its developmental stage. The all-day hikes at Cranbourne and Whittlesea were great social successes, and members returned from them with a greater understanding of their fellow members.

Council Meetings.

During the year the Council has dealt with all business matters of the Branch. Council meetings were held monthly. These meetings are held at the homes of the various councillors, and quite often involve time-consuming journeys. The attendance was excellent. During the year, 27 letters were received and 34 letters were sent out by the correspondence secretary.

Membership.

There has been an increase of seven members to the Melbourne Branch. The last member admitted to membership was actually number 50 on the membership roll. Allowing for resignations, there are 41 Melbourne members.

The Association now has a Queensland representative, which means that there is a representative of the A.E.T.A. in every State of Australia containing an electric tramway. It is hoped that a Queensland Branch may be forthcoming, as the Queensland representative is a very active L.R.T.L. man.

Finally, we have a new United States member.

Sydney Branch.

The Sydney Branch will publish their own report so that there is no need for comment there.

Future.

There is much to be done within the Association by the members. A photographic collection is a long-felt want, and it is essential that an Association such as ours should have a comprehensive Australian collection. Tickets are also needed to form another collection.

The Council expects to appoint an active librarian at a very early date. The library matter has been accumulating at various members' homes.

Also the Council will be appointing two hosts whose duties are to meet and entertain new members and visitors at meetings. Two of next year's meetings will be addressed by Mr. H. H. Bell, Jnr., of the M.M.T.B.

Thanks.

The members of the Melbourne Branch owe their thanks firstly to the three public bodies, the Melbourne and Metropolitan Tramways Board, the Victorian Railways, and the State Electricity Commission of Victoria. Without the co-operation of these bodies, our existence would become very dull. Secondly, the Council members are to be thanked for working so well as a team. Finally, thanks must be extended to Mrs. Stranger, Mrs. Duckett, Mrs. Jack Richardson, Mrs. Beckett, Mrs. Busch, Mrs. Kings, and Mrs. Gipps, who opened their homes for Council meetings, and who supplied such excellent suppers.

ANNUAL MEETING
Election Results.

The Sixth Annual Meeting of the Melbourne Branch proved highly successful both from the business and the social aspects. Despite the handicap of distance—lack of a suitable hall elsewhere necessitated holding the meeting at Brighton Beach — and the fact that several members were absent on duty, there was a really good attendance.

Office-Bearers.

All office-bearers of the branch were re-elected, most without opposition—a striking tribute to the esteem in which members hold them.

Proceedings were concluded with supper, and the traditional birthday cake, which was adorned with a plan of Balaclava Junction in chocolate icing — the work of Mrs. Kit Richardson.

SYDNEY BRANCH
Annual Meeting.

The 4th Annual Meeting of this Branch was held on September 15 at the Trades Hall, Sydney. A good attendance included one visitor, Mr. Fred Andrews, late of Leeds, England, who was welcomed by the chairman, Mr. Eric Law.

It was stated at the meeting that the Report to be forwarded to the Newcastle Council, as mentioned in the June/July issue of this journal, was well under way, and should be completed before this appears in print.

It is intended to hold a tram tour of the North Sydney lines in an R type tramcar and further details will be given about this later. It was decided also to hold a Picture Night, early in November, at the Vacuum Theatrette, when a small admission charge will be made to swell Association funds.

Future Programme.

October: Talk by Mr. F. Andrews, entitled "Leeds Tramways."

November: Jumble sale of members' surplus items of transportana proceeds in aid of Branch funds.

December: Screening of films and colour photos taken by members K. McCarthy and B. Parle, at recent tramway closings and other occasions. A small coin collection will be made at this meeting.

New Office-Bearers.

The following office-bearers were elected at the recent Annual Meeting:—

President, Mr. K. Miller; Vice-President, Mr. E. A. Law; Secretary, Mr. Wal Lane; Treasurer, Mr. A. D. Greenwald; Public Rel. Officer, Mr. R. Murray; Asst. Public Rel. Officer, Mr. N. Chinn; Recorder, Mr. K. McCarthy; Councillors, Messrs. Stewart and Perry.

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Annual Report for 1949-50
(Abridged)

During the year under review, general meetings have been held each month at the Trades Hall, Goulburn Street, and attendances have averaged 75 per cent. The membership roster now numbers 39, an increase of seven over last year's figure.

It was decided early this year to embark on an advertising campaign, per medium of theatre slides at Sydney suburban cinemas, with the dual purpose of bringing before the public the advantages of modern trams over other forms of travel and also introducing this Association as the sponsors of modern tramways. The cost of this, which is very heavy, is being met partly from Association funds and partly from private subscription. The slides commenced screening at three theatres at a time, for a week at each, and the contract runs for three months. To meet part of the cost of the above scheme, it was decided to increase annual subscriptions to 10/- and to delete entrance fees.

Another publicity scheme which is nearing completion is in reply to a request from the Newcastle Council. The Council asked this Branch to draw up and submit a scheme to improve the transport facilities of that city. If this scheme is adopted, there will be trams running again as well as buses in Newcastle.

The Department of Road Transport has very generously offered to present to this Branch an LP type tramcar complete, the Association to take delivery of it at Randwick Depot, during 1951.

Social Activities.

A very successful Picture Night was held in the Vacuum Theatrette on the 25th November, when a good roll-up saw several very interesting films. The Association's funds benefited to the extent of £2/18/- from this night.

A tram tour by special car (PR1 class, 1517) was held on Saturday, March 25, covering a large portion of the Eastern Suburbs. This was very successful and, as a result, the Association was able to make a profit of £4/12/-.

A conducted tour of Flemington Car Sheds was held on August 12, which proved very interesting to members.

MELBOURNE P.C.C. HIRED
A.E.T.A. Members Ride New Car

The dates of August 5th and 19th will no doubt retain a place of great importance in the calendar of events of the Australian Electric Traction. On these two days, through the courtesy, and with the co-operation of, the Melbourne and Metropolitan Tramways Board, the Melbourne members availed themselves of the opportunity to sample travel on the first tramcar in Australasia to be equipped with P.C.C. Trucks and Electrical gear. Such equipment has revolutionized the tramway (or streetcar) systems of numerous cities in the U.S.A., Canada, Great Britain, Holland, Belgium, Spain, and Italy, to mention just a few countries.

The car was ably driven by the officer-in-charge of the Drivers' Construction School at Hawthorn Depot, Inspector Elliot, with the assistance of Mr. Nichols, from Malvern Depot, who acted as conductor. With Inspector Elliot at the controls, members received very thorough instruction in the method of using the equipment, and practical demonstrations of the various acceleration and braking methods incorporated. On the second tour, we were pleased to have our Bendigo member (Mr. B. Miller), together with Inspector S. Denis and Mr. W. Barnes, with us. All three being in the traffic section of the S.E.C.-operated Bendigo system, they paid particular interest to the car.

The route taken was from Malvern Depot at 2 p.m., to the city via Glenferrie, Toorak and St. Kilda Roads, up Swanston Street, along Victoria Street, into Elizabeth Street, and out to West Maribyrnong terminus. Across to Essendon Aerodrome via the Maribyrnong and Ascot Vale Roads connecting [illegible]. A half-hour break was provided [illegible] for afternoon tea, and the car [illegible] turned to the city via William Street. Malvern Depot was reached by traversing Hanna St., and St. Kilda, Dandenong, and Glenferrie Roads. Thus, practically all the open ballast track on the Board's system was covered in the one afternoon, and provided ideal sections on which to "test" the acceleration, high speeed running and braking capabiilities of No. 980.

Considerable publicity was given the tour in the daily press, which brought about the "prize" remark of the afternoon. The Association was written up as having hired the "Tramway Board's new 'SILENT' tram." Approaching West Maribyrnong, a group of young children was noticed to watch our approach with awe-inspiring silence. As the sleek green and cream car glided past, they suddenly found their voices and shouted: "It's a fraud—you can hear it!"

THE AUSTRALIAN
ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:
Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone: LF 1665)
If outside Victoria, communicate with the nearest representative:
ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND: Mr. G. C. Stewart, 74 Fowlds Ave., Sandringham, W.2
BALLARAT: Mr. W. Jack, 31 York St., Ballarat East, Vic.
BRISBANE: Mr. F. A. Andrews, 35 Stephens St., Morningside, Q'ld.
CHRISTCHURCH: Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON: Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON: Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.
THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.
VISITORS ARE ALWAYS WELCOME.

OVERSEAS ITEMS

SHUNTING AT BACUP
A Passenger Problem

At terminal stations what goes in must come out. Bacup in Lancashire shares this handicap with Euston and other famous rivals, and, with short platforms, when what goes in is a special passenger train of ten bogies probably double-headed and several coaches are off the platform, various miraculous feats akin to rock-climbing aided by steps are performed to get the passengers on their native heath (or ballast).

To see the Bacup staff looking for a pretty girl requiring assistance and getting a 15-stone grandmother instead is a touching sight indeed, whilst the overhead work with luggage, prams and bicycles would earn the approval of a Billingsgate porter. The chief day on which all this happens is the "return Saturday" of the town holiday specials, and whilst the mention of nine or ten specials may be greeted with a sniff by big stations, if the sniffers had to get them into Bacup amongst ordinary trains from two directions, they would stop sniffing and start shunting.

So we come to the crowning disaster that strikes this devoted terminus of Bacup, the occasion when it is not enough to get 'em "down them steps," but when, owing to age or infirmity, there is nothing for it but to get the passenger to the other platform. That means detaching one or two coaches from the rear of the special and placing at the opposite side of the "island" so that the non-mobile passenger may alight.

Years may go by without disaster, but about 1937 the dreaded blow, or the tragedy of the passenger who needs shunting, fell once more. When a Blackpool special arrived, there in the last coach was a cheerful but incapacitated man who calmly announced, "I can't get out bowt I'm at platform." The foreman recognised a friend and knew beyond doubt that the fatal shunt was necessary. "George," said the foreman, when the shunt had been made, "when tha' comes back next year, get int' front end, then we's not have a' this messing about to get thee out." "Reet," said George.

Second Offence

A year passed and once more it was Bacup return holiday Saturday. Once more a Blackpool special arrived and once more, horror upon horror, the same foreman saw the hardy annual, George, looking out of the very last coach—off the platform, ready for his yearly shunt. Before he could speak, George gave tongue: "I know what th'art ban to say," he announced, "tha towd me to join at front end and by gum I did, but they've swapped us round somewhere, and now I'm at back end."

Alas, it was only too true: from Blackpool to Bacup there are two routes. The first year George, at the rear, had come head-on all the way, but now, after joining in front at Blackpool, the train had reversed en route at Ramsbottom, and once again George had reached Bacup in rear. The shunt with George's coach had been made and George safely grounded when the foreman spoke. "George," he said slowly and carefully, for this had tried him highly, "George, we don't want this any more; wherever tha' goes next year, Blackpool or not, get into the middle, and then tha'll be at platform at Bacuup choose how." And it was only when George had departed that a terrible thought struck the foreman—trains can be divided as well as reversed, and George, "int' middle," might again be in rear on arrival at Bacup.—(W. P. McNeil, writing in the L.M.S.R. staff magazine, "Carry On.")

INDIA TO BUILD LOCOS.

India is to manufacture locomotives in the near future. The Tata Locomotive and Engineering Co., which already manufactures boilers, has entered into partnership with the Government of India for this purpose. The German firm of Kraus-Maffeci Ltd. will provide spare parts and technical advice.

ULSTER DECLINE.

Further rail services are being abandoned in Ulster. This time it is the turn of the Cookstown branch and the Derry Central line, on both of which passenger services are to be discontinued.

PROGRESS IN IRAQ.

The Iraqi State Railways rarely hit the headlines but they seem to be doing a good job. Schedules are being cut on the standard gauge sections, particularly between Baghdad and Mosul, as well as on the metre gauge lines. New air-conditioned cars and reduced fares are attracting more traffic. New bridges over the Tigris and Euphrates have eliminated transhipment delays and train ferry working, respectively.

DIESEL COMPARISONS.

First of the experimental "straight" diesel locomotives to be built by British Railways is a 400 h.p. switcher, No. 11001, now in service ex-Ashford Works (Southern Region). Comparisons will be made with diesel-electric machines. There is also a 4-8-4 main-line "straight" diesel locomotive under construction at Derby (London Midland Region).

PUNCTUALITY.

Southern Region trains recently set new punctuality standards. Passenger trains averaged only 20 seconds late and goods trains 1.23 minutes.

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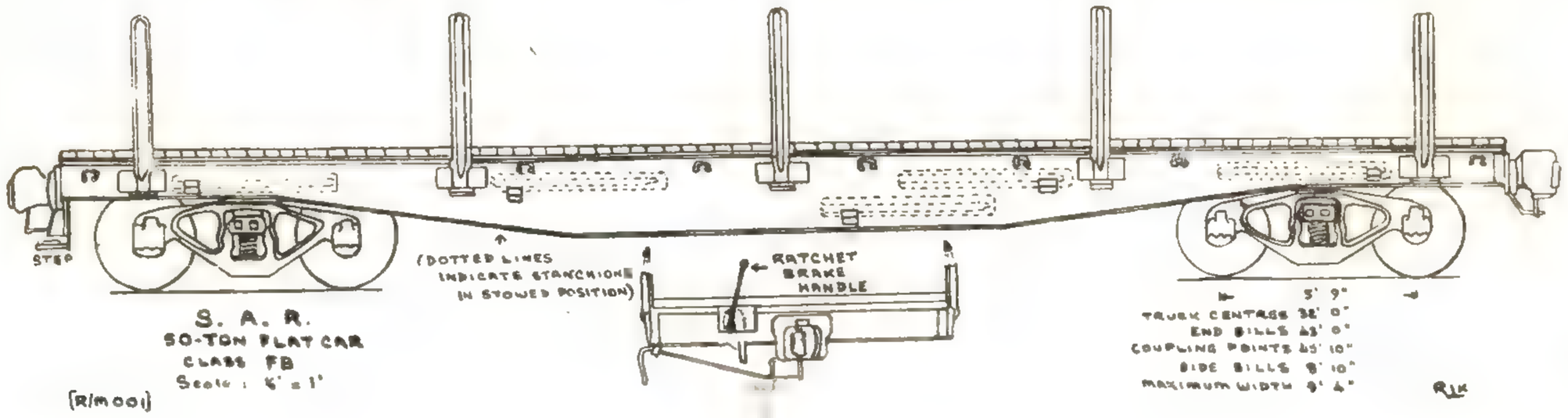
MODEL RAILWAYS in Australia

ELECTRIC — STEAM — CLOCKWORK
ALL GAUGES
Contribu ions Invited



S. A. R.
50-TON FLAT CAR
CLASS FB
Scale : 8' = 1'
(R/m001)

AUSTRALIAN ROLLING STOCK
No. 1 — S.A.R. 50-ton Flat Car

This month we present the first in a series of diagrams of rolling stock used on Australian railways. The scale used (⅛in. to 1ft.) is rather small for good reproduction of detail, but is the handiest, bearing in mind various aspects of modelling, as well as our own problems.

S.A.R. freight cars, with certain exceptions, are painted battleship grey.

Letters from the Chair

Greetings, brother fans!

Our eminent contemporary, "Model Railroader," recently coined a phrase pungent as it is apt, for the fly-by-night model railway manufacturer—"The Impermanent Magnate."

In Australia, manufacturers in this category are all too familiar; yet the fault is often not theirs, but that of the modeller —YOU!

Building model railway equipment is an exacting business, if done properly, and the equipment needed to produce really good work on a commercial basis is costly and often hard to obtain. Failing its use, time consuming (and equally costly) hand work is necessary. British, German, and American manufacturers, with the whole world for their markets, usually have large capital backing, with a numerous staff, and years of experience behind their work: they produce only those lines for which there is a ready sale. The Australian manufacturer, on the other hand, has to struggle along —usually by himself—often having given up a well-paid position for the sake of the hobby, and with none of the advantages mentioned above. In some cases, moreover, really fine work produced by our local factories is passed over by purchasers for an imported product bearing a famous name.

Yet modellers complain bitterly if the range of equipment is limited, or if prices are higher than for similar lines from overseas—despite the fact that the imported line invariably represents overseas railway practice, not that of Australia.

Let it not be thought, however, that the local manufacturer is entirely blameless. More than one has produced most unrealistic equipment, despite friendly advice from those in a position to give it. In some cases, the manufacturer has not been interested in model railways and has tackled the problem purely from a money-making viewpoint. Results have usually been disastrous—both financially and operationally.

In general, however, the Australian model railway manufacturer is a hard-working, long suffering, patient individual, who deserves better than he gets.

This magazine aims to help him to gain the recognition he deserves, and the custom that goes with it: we look to you to do your share.

Yours for better model railroading,

THE ARMCHAIR MAN.

THE B.P.R. BUILDS A LOCO.

By K. N. Lowry
(Third of a series by this author)

The policy of the Balwyn Pacific is to buy its motive power. This is not the result of an aversion to building—the primary objection is the time factor. Loco. construction is the greatest individual time-absorber, and in the present range of B.P.R. activities, I find quite enough already to fill my time-table.

So I have been content to leave the locos. to the manufacturer, purchasing them in either finished or kit form, and adding extra details to suit my tastes. By 1940, I had weeded out the hybrids, and had the nucleus of a consistent loco. stud, with three American 2-6-2's, when war put the brakes on international trade. For five years the Prairies handled the spasmodic B.P.R. war-time traffic, while plans were prepared for reinforcements after victory.

Which is where we slipped. Victory didn't bring resumption of trade relations. Instead, it brought the Dollar Doldrums. So a change of policy was indicated. I went into a huddle with two friends, Les. Baxter and Des. Ramsay, and it was decided that we would combine our resources and abilities to produce a loco for the B.P.R.

Design was the first problem. Both my collaborators were familiar with local types, but vague on American —and a local road engine would not fit into the stud consistency of my three Yank locos. Then it was recalled that the South Australian Railways changed to American designs about 1926, and their modern road engines were typical Yank, but they still used the older engines on

local and switching service. So we settled for a Great Western 0-4-2T, which was typical of the small Tank engines, such as the E and F Classes, used in Victoria for suburban traffic in pre-electric days, and later relegated to shunting service.

The B.P.R. aims to be a Railroad with a Reason, and the next thing was to fit the new loco. into the general theme. So the Official History was revised, and it appears that when the road was being built, the company purchased a small stud of tank engines to handle work trains and temporary service. After the line had expanded, the subject of road engines was debated, locos of American pattern were selected as most suitable for the road's requirements, and the tank engines were rostered for switching and short local runs. As the tanks came in for overhaul, they were refitted from spares kept for the Yank engines—so now the survivors of the original stud are resplendent with pilot boards, bell, poling pockets, electric headlights and markers.

The loco. was built up entirely—no commercial parts were used. The only purchases were sundry nuts and bolts, and various sizes of wire for motor and fittings. This is not unique, but it is unusual, even in this country. Though many Australian modellers build from scratch, they generally utilise a few commercial parts, such as motor, gears, or wheels.

Les. Baxter built the underframe. He made a steel die to cast the drivers, built the motor (16 volt A.C.), and cut the worm and gears. After he had assembled drivers, connecting rods, motor and transmission on the main frame, the chassis was passed to Des. Ramsay for the next stage.

Des. builds all his own superstructures, and is well equipped for this job. His own locos. are top-notchers, but we both agree that his bodywork for F604 is the best to date. Des. was to build the basic bodywork of tinplate—boiler, tanks, cab, bunker, stack and dome. He exceeded his quota, and included other fittings—tank air vents and filler caps, smokebox front, safety valve, and also turned up the air pump, whistle, bell, and headlights.

After the work handled by the other two, you'd reckon I wouldn't have much part in building the loco., except that I organised it, and maybe you'd be right at that. Somehow or other I filled in six months of spare time installing the rest of the fittings. (Those were the days when I didn't have the range of parts I have to-day, which would have shortened the time—but also they were those beautiful days when I was still in the Army, the war was over, and I did have some spare time to do some modelling for myself.)

First, I finished the chassis by adding power collectors, trailing truck, couplers and draft-gear, sand-boxes, and pipes, and dummy brake equipment—brake cylinders, air reservoirs, shoes, hangers, and rodding.

Next came the superstructure. This involved installing the fittings supplied by Des., and casting or turning the others—check valves, generator, marker lights, brake hoses, coupler pockets and engine crew—and applying the pipes, conduit and handrails, steps and pilot boards. Finally, the inevitable coats of paint and lettering, both done by hand with sable brushes. Paint comprised an undercoat of grey primer surfacer, 2 coats of flat black (similar to satin black), and 2 coats of blackboard renovator. The latter gives a dead flat, smoky finish similar to full-size engines, but has poor holding qualities on metal surfaces, so it needs one or two subcoats of regular flat black paint.

The loco. is fully detailed except for cab interior, which is full of motor. Gearing is 20 : 1, and even when flat out, F604 sidles around at a stately crawl, the proper pace for a lady of her maturity. A brass Maker's Plate was attached to each side, engraved with the surname initials of the three builders—B.R.L.

I can't say I'm a convert to loco. building. My main objective is to run trains and, as I'm not one of those loco.-a-week wizards, if I include locos. on the construction programme, I'll be due to retire before the B.P.R. resumes timetable operation. Someday I intend to complete a brother of F604, but the bulk of the stud will be left to manufacturers.

Still, I must admit I enjoyed the experience of making a loco.—or, to be precise, 1/3 of a loco. — and created a brand new set of curses in the process.

HELPFUL HINTS
By The Armchair Man
LANDSCAPE BASE

Has any reader ever used a material known as plaster-of-paris bandage. We recollect encountering it in naval sick bays during the late war, but have never heard of its being used in model railroading. It appears to be used widely ror construction of scenery (as a landscape base) in the United States, and we should be interested to hear from anyone in this country who has tried it.

SOLDERING SHEET METAL

Mr. E. F. Carter, well-known English modeller, advises the use of a true-squared wooden block when doing soldering work to car sides and ends or loco cabs which involves soldering one sheet of metal at right angles to another without the use of folded ends or tabs. The block should be mounted a little above the base with the aid of washers so as to allow metal sheets to be slid through when a join has to be made away from the edge.

The map appearing on the back cover of this issue was specially drawn for "Railways in Australia," by Mr. C. C. Singleton, for whose painstaking work we are greatly indebted.

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MAYFIELD LINES

By L. A. Clark

Continued

STATIONS:

Platforms are cement sided and surfaced, and each is provided with two name boards, while two of them are graced by platform buildings, beautifully constructed and realistically finished, presented to the management by an enthusiastic visitor to the layout. Names of stations, with one exception, are those of places actually in existence but not served by rail. It may be of interest to mention why this particular course has been adopted. It is to avoid the possibility of a super critical visitor seeing a station designated, say "Ashfield," saying "That's nothing like the real Ashfield." Mayfield and Wallsend are suburbs of Newcastle, N.S.W., Cammeray and Brookvale are Sydney suburbs on the North side of the harbour, all at one time on tram routes, but which now have to be content with buses. Athol is another Sydney suburb, also on the North side, still fortunate enough to have a tram and ferry service. Norwood is an Adelaide suburb served by tram. At the time of naming Stanbridge it was imagined that a nice sounding name had been invented, but some years ago, it was learned, not without some chagrin, that there was a village by that name some miles out of Leeton, N.S.W. Ermington is a suburb on the main road between Ryde and Parramatta, and Dalmar is the name of a children's home near Carlingford, conducted by the Methodist Church. The exception is Griffith, a town in the Murrumbidgee Irrigation Area, N.S.W. and an important railway centre.

MAIN TERMINAL:

The main station at Mayfield has six platforms, used both for arrivals and departures. Platforms 1-4, are for main line trains and 5-6 are used by suburbans, although there are facilities for trains to arrive at any platform from either the up main or up suburban, if required, and, similarly it is possible for a train to depart from any platform and have access to the down main or down suburban lines. The platform roads in most constant use are 3-6, Nos. 1 and 2 being rather in the nature of storage sidings, used as arrival and departure roads in the peak hours

ROUTE. — The first wayside station, Cammeray, has four platforms. Only the "electrics" stop here; all other trains running through unless forced to stop by reason for the section immediately ahead being occupied. Immediately after leaving Cammeray, the suburban and main lines diverge somewhat so as to allow the main loco. depot to be placed between them. Passing "loco." which is referred to later, the four tracks draw together again and pass through a wide curve to Norwood, 65 feet from Mayfield, where there are also four platforms. Quadruplication ends here, and the remainder of the line is ordinary double track. Leaving Norwood, there is a short downgrade at 1 : 85, followed by level track to Brookvale (97 feet), the terminus for "electric" trains which use the middle road, leaving the outside platforms free for "steam" trains. There is a siding, trailing to down trains for storing electrics when not in use. Proceeding, the line drops for a few feet at 1 : 70 then flattens out through an easy curve to Stanbridge, (125 feet), junction for the Wallsend branch. Continuing on an open curve, the line begins the long descent at 1 : 100 for 45 feet with the island platform of Dalmar about half-way down Rounding a curve at the foot of the grade, the track approaches Griffith, an important country station (205 feet), with loco. depot, turn table, three platforms, carriage and goods sidings. Some trains terminate here. Leaving Griffith, there is a section of straight with a reverse curve prior to reaching Ermington (256 feet), an island platform on a curve. Getting away from Ermington each track passes through a separate concrete opening under the line immediately north of Brookvale station. A few feet farther on it enters a tunnel of five feet long on a curve, and, emerging in a cutting, it passes under the Wallsend line and approaches the terminal point at Athol (290 feet) where there are three platforms, loco depot with turntable together with facilities for storing and marshalling trains. The last 90 feet of track is level.

BRANCH LINE. — The Wallsend branch leaves the main line as single track immediately before reaching Stanbridge station, and has its own separate platform.

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Up branch line trains reach the up main through a cross-over. Leaving Stanbridge the branch parallels the main for about ten feet, then descends at 1:48 to pass under the main tracks at Mayfield yard by a short tunnel on a curve. In the middle of this tunnel the grade changes abruptly and the track then ascends at 1: 25 for four feet to pass over the main line by overbridge just north of Athol station and enters Wallsend station which is located on level ground and has a single platform with engine run round, two sidings, loco. depot with turntable. The gradients on tht branch are necessarily severe and may be classed as momentum grades. Trains attain sufficient speed when running downhill to carry them up the other side without any trouble. But, if through any cause a train is forced to stop on the 1: 25, it's just too bad and unorthodox methods must be employed to bring it into the station. The branch is worked exclusively by tank engines of the 4-4-2 13 class and 4-6-4 30 class.

(To be continued.)

(It is regretted that publication of the Mayfield Lines track map has to be held over until next month.)

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When using litho paper car sides on wood, always apply the glue to the paper first, leave for a while, and then attach to the wood. If the glue is applied to the wood, or if the paper is not left, the distortion which always occurs in the paper; due to damp from the glue, will spoil any chance of a pleasing finish.

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Live Steam

TWELVE-INCH GAUGE

A Melbourne Garden Railway

Not least among the attractions of Beaumaris, a bayside suburb some fifteen miles south of Melbourne, is the model centre owned and operated by Mr. James ("Skipper" of the Model Dockyard).

Arranged in concentric rings are a model boat channel, a model car track, and test tracks for live steam locomotives in three gauges — 2½ in., 3½ in. and 5 in. For the last-mentioned four rails are provided, the outer rail being common to all three gauges. Standard Austral Bronze brass rail, of the section much used for 2½ in. gauge, is provided, this section being virtually to scale for 5 in. gauge.

Rails are firmly spiked to square-section hardwood sleepers which rest on a concrete base, being secured at the outer end to the wooden moulding. A strong wooden beading is secured to the inner ends of the sleepers, resulting in a track which should stand up well to any operating conditions. The overall diameter is 60 feet.

12 in. Gauge

The major attraction, however, is the 12 in. gauge railway running in an oval formation around the garden. This line has 15 lb. rails obtained from colliery skip tracks. Experiments were conducted with aluminium alloy rail cast in 4 ft. lengths, but this proved unsuitable, being difficult to bend for curves.

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In addition to the oval, there are two sidings serving loco and car sheds. The junction is fully protected with home and distant signals.

Rolling stock consists of two V.R. I trucks (4-wheel gondolas) and a Z van, all to scale, with a bogie passenger car based on the V.R. A class, but with only two compartments, of a size suitable for the conveyance of children. Motive power is provided by a scale reproduction of the old A class 4-4-0 design of the V.R. — long since out of service in full size. A bogie tender is provided for the loco, which was built in 1939. Boiler pressure is at 100 lb.

Total length of track is 220 yards and there are two stations, a trestle bridge and a level crossing.

We hope to illustrate this railway when operations re-commence later in the year.

CLASSIFIED "ADS"

Small commercial advertisements under this heading will be inserted. Charges are 3/- per inch for one insertion or 25/- per inch for one year.

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Letters to the Editor

Readers are invited to write letters for publication on any matter concerning railways or tramways in this country. Noms-de-plume will be printed, but in all cases the reader's correct name and address must be supplied when writing.

RAILFAN LINE?

The Editor,
Railways in Australia,
Dear Sir,

At Gembrook (Victoria) there used to be a steel-railed timber drawn line running about ten miles to Russell's Mill; this line was pulled up four or five years ago, but a very nice 3ft. gauge tank loco, still apparently in good condition, has been left to rust. It stands on about 50 yards of track, less than ¼-mile from Gembrook station. Another steel-railed tram line ran from Warburton to New Federal Mill. This line went out of use only last year, I believe, and, as far as I know, it is 3ft. gauge and has not yet been dismantled.

Possibly some keen, moneyed group of enthusiasts would like to make use of this equipment to run their own railway. The idea sounds rather fantastic, but it may have possibilities.

There is only one timber tramline, I believe, still in use in Victoria—Erica to Ezard's Mill—and that is to close next January.—Yours, etc.,

RALPH L. ALGER.

Canterbury, Vic.

(Whilst few railfans can be described as "moneyed," Mr. Alger's idea is not from fantastic. Such things have been done in other parts of the world with great success. Pooling of resources, and co-operative effort will work wonders. This journal is prepared to help by publicizing any such venture.—Ed.)

TROLLEY BUSES

The Editor,
Railways in Australia,
Dear Sir,

I would prefer to "Random Reflections" —in the September issue of the "Tram Tracks" Section of RAILWAYS IN AUSTRALIA, which I have just received.

Having been connected with transport for a number of years, I try to temper an enthusiasm for tramways with due regard for all circumstances and accuracy. Like many others, I have been compelled to come to the conclusion that the sphere for tramway operation is being reduced to that of mass transportation in circumstances where an underground railway is not justified or in high-speed suburban and inter-urban work on reserved track. If, therefore, another form of transport is to be substituted, one hopes this will be the trolley rather than the motor bus where conditions favour the retention of electric traction. Following on from this, it stands to reason that where electricity has been used for years as the motive power, it should still be employed. I have been at a loss therefore to understand the bias shown against trolley buses amongst tramway enthusiasts, and this fault is even more prevalent over here than is shown in your excellent paper.

In "Random Reflections," however, I venture to suggest that the general picture given is one which would mislead those who do not know the true facts in regard to the present position of trolley buses in U.K. May I correct these?

Bradford is admittedly replacing trams by diesel buses on SOME routes, but there are others where trolley buses are either being put on, or will be shortly. The trouble here is that the State Electricity people are charging too high a price for current, according to the Chairman of the Bradford Transport Committee. The recent increase in the price of diesel oil, however, will swing the pendulum in the other direction.

London has NOT decided to abandon trolley buses, nor was the North London substitution, involving a total of 1,770 trolley buses, an "abortive experiment" on which £8,000,000 was "wasted." It was part of a plan, and the intervention

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of war has caused a change, though the reasons for replacing the remaining trams by diesels are unconvincing to those who take an impartial view. The only trolleybus route to be replaced is that working out of Wandsworth depot to Battersea—and this is only on account of the fact that all trams are being withdrawn from this shed and the L.T.E. states that it is more convenient to utilise it for diesels only. The fact is that the trolley bus is extremely popular with the public.

In regard to Wolverhamption, this was never an "all-trolleybus" town as your correspondent states. Buses were operating in 1924 **before** the first trams were changed over to trolley buses. Since then certain bus routes, as well as all tram routes, have been converted, and there has been no statement that all future extensions are to be by diesel vehicles. The most recent articles by Mr. C. Owen Silvers, General Manager at Wolverhampton, indicate no change of view, and advocates a stable policy by the Government in regard to the price charged electric current, so that the development of the trolleybus can proceed.

Contrary to what your article says, Reading has recently converted a motor bus route to trolleybuses and Portsmouth is preparing to do the same with three routes. Fleets of new vehicles are on order for the following places:—NOTTINGHAM, MEXBOROUGH, S. SHIELDS, DERBY, CARDIFF, READING, BOURNEMOUTH, BRIGHTON and many others.

I hope you will publish the gist of the foregoing,—Yours, etc.,

B. RATCLIFFE MILLER,
Transport Manager, Portsmouth, Gosport & Bognor Regis Gas Undertaking.
Portsmouth, England.

Fan Mail

The Editor regrets his inability to reply direct to correspondents, except in special circumstances.

There is still a very large backlog of unanswered mail which will be tackled as speedily as possible.

W. SIMPSON, Mt. Colah, N.S.W.—Not much chance of either of the extensions you mention taking place. Raymond Terrace line is a good idea.

E. R. GEEVES, Coburg, Vic.—Thanks for good wishes.

R. KELLY, Albert Park, Vic.—News clippings most useful.

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

Mr. E. A. DOWNS, Normanhurst, N.S.W. asks the present or former location of a number of V.R. stations and sidings. The answers (in brackets against each) are:—Minapre (now Lascelles, Mildura line); Lowry's Siding (North-east line between Broadford and Tallarook); Mathieson's Siding (N.E. line between Wandong and Kilmore East); Extended Company's Siding (Korumburra area).

He also asks the date of the last "through" train service to Wensleydale. ANSWER: During the war, in 1941 or 1942.

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 545 High Street, NORTHCOTE, N.16, Vic.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: I. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

Meetings last Saturday night in each month at 8 p.m. in Club House, at above address.

Interstate visitors given warm welcome.

Secretary: R. R. Steward, same address.

THE AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY meets regularly as follows:—

SYDNEY BRANCH: Railway Institute, Devonshire Street, Second Tuesday in each month. Secretary: H. H. Matthews, 27 Ross St., PARRAMATTA, N.S.W.

MELBOURNE BRANCH: Railway Institute, Flinders Street, Fourth Thursday in each month. Secretary: R. B. McMillan, 15 Mercer Rd., MALVERN, S.E.3.

QUEENSLAND SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings every month; contact the Secretary, Mr. C. H. Garner, Gray's Rd., GAYTHORNE. Model Railway Section with operating O gauge, and HO under construction, meets first and third Mondays; contact the Secretary, Mr. C. Harrison (B3508), or the Public Relations Officer, Mr. C. McTaggart, 101 Laura Street, TARRAGINDI.

READERS' WANTS

Member of the A.R.L.H.S. and bona fide subscribers to this journal may have small advertisements inserted at the nominal charge of 1/- for five lines. Forward postal notes or stamps (up to 2½d. value) with advertisement to the Managing Editor.

FOR SALE: "Model Railroader," Mar., 1949, to Feb., 1950, incl., 2/- ea., £1 lot. Carter "Model Rlys. for Begi (4 books), "OO Gauge Layout and sign," "2-Rail Electrication"—all 4/- Kalmbach "How to Build a Model Railway."—10/-.
A. W. Moloney, Menangle St., GANMAIN, 6S, N.S.W.

FOR SALE: Trix Many-Ways HO Stations Terminal, 2 Island, Passing, Goods. New-cost, £17; sell £8. Other Trix items; send s.a. envelope for list. P. Ellis, 3 Keiller St., MOORABBIN, Vic.

TICKETS REQUIRED: Will exchange tram or bus tickets from anywhere, Govt. or private systems, particularly Australia and New Zealand. Ken Magor, 38 Gulliver St., HAMILTON, 2N, N.S.W.

WANTED TO BUY: Railways in Australia, Vol. I, No. 1; Tram Tracks, Vol II, Nos. 1, 2, 3, 12; Vol. III, No. 7. W. J. Hartley, 1290 Malvern Road, MALVERN, S.E.4, Vic.

WANTED: Photos, data, blueprints on narrow-gauge lines in Australia. P. Ellis, 3 Keiller Street, MOORABBIN, Vic.

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RAILWAYS IN AUSTRALIA

1/3 MONTHLY

The Magazine about Australian Trains
Incorporating TRAM TRACKS the Electric Traction Monthly

Published monthly by TRACTION PUBLICATIONS, 29 Seymour Grove, BRIGHTON BEACH, S.5

Volume III, Nos. 10-11 October-November, 1950

NEW ZEALAND RAILWAYS RECORD YEAR

The New Zealand Government Railways experienced the highest gross revenue ever recorded, during the year ended 31st March, 1950. Gross revenue was £19,541,184, representing an increase of five per cent. on the figure for the previous year's operations. Unfortunately, working expenses advanced by 4.55 per cent. to £20,596,740, thus giving rise to a nett loss on operations of £1,055,555 — actually an improvement on the £2 million loss which was anticipated.

Passenger business for the year was augmented, mainly due to the restoration of a full service on the Auckland - Wellington "Limited" trains, and the increased use made of first class and sleeping car travel. The holding of the Empire Games required additional train mileage, and, despite a decrease in season ticket travel, passenger revenue increased by 3.2 per cent., or £88,447, and the passenger train mileage advanced by 7.5 per cent.

Additional travel amenities were introduced during the year. Sleeping berth passengers have been afforded the hire of basinettes, whilst experiments have been conducted with the introduction of train hostesses on South Island "Limited" trains. Another feature is that booking is now open two months in advance, instead of one month as previously.

Freight Figures Up.

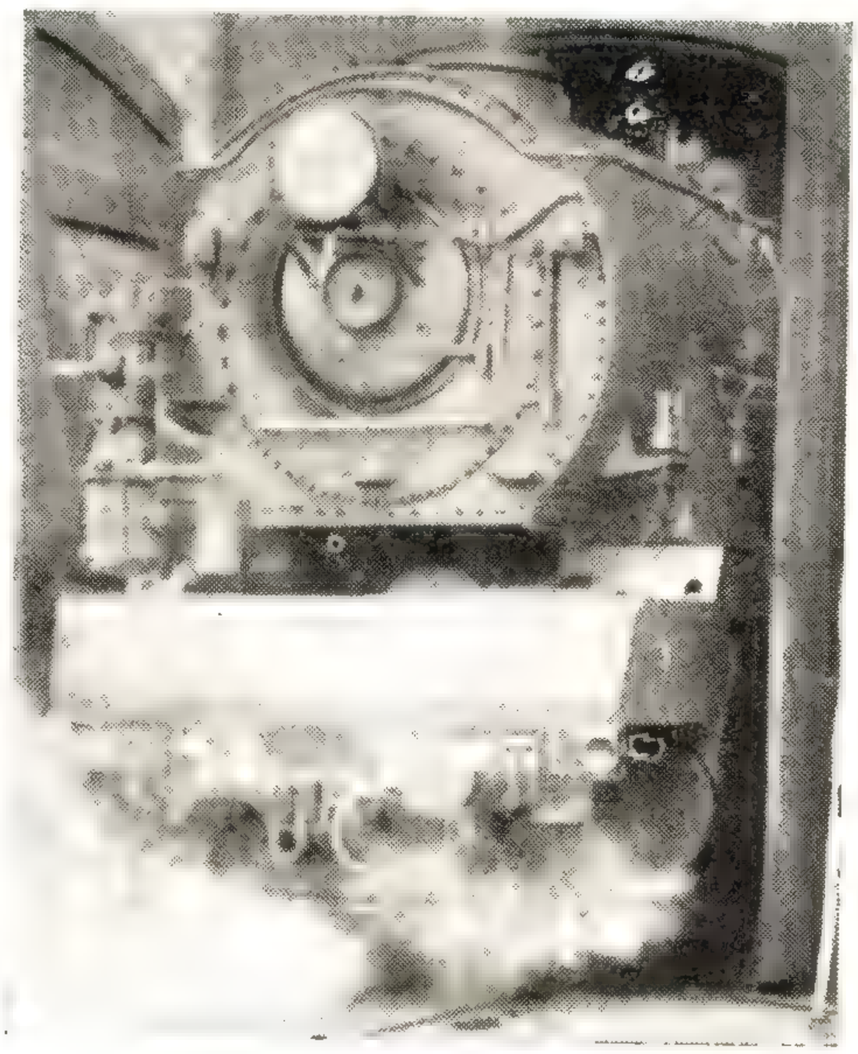
Freight traffic grossed £12,434,487, representing a 5.85 per cent. increase, whilst tonnage moved was increased by 2.92 per cent., and nett ton-miles run advanced by 5.19 per cent. These achievements are more than satisfactory, considering the deterioration of motive power, rolling stock, and the prevailing staff shortage. The upward trend of rail freight statistics is more significant when the diversion of certain traffic to ancillary road services is considered.

Oil-Fired Locomotives.

During the year, 22 more locomotives were converted to oil burning, owing to the acute fuel difficulties; the oil-fired fleet now comprises 10 J, 28 K, and 35 K2 class engines, whilst it is intended to convert two more each of the J and K classes as they pass through the workshops. Some measure of financial relief was afforded by a fall in the price of fuel oil by 56/9d. to 144/6d. per ton. The consumption of native coal dropped slightly, although the cost per ton has increased, causing £41,000 extra expenditure. The practice of oil burning has been confined to the North Island.

Big Orders Placed.

To make good the inadequacy of present rolling stock and motive power, large orders have been placed for new equipment. Tenders have been called in Britain for the supply of 3,805 freight cars, at an estimated cost of £3,952,000. Deliveries against an earlier order placed in Britain for 1,075 cars have commenced, and the construction of a further 900 cars has begun in the



NEW BABY — and a big one, too! No. 5801, first of 25 new 58 class locomotives for the New South Wales Railways, leaves Eveleigh Shops under steam for the first time. Guiding the big 4-8-2 was Loco Running Superintendent Aggasiz; the date — 19th January last.

Note the casing above the buffer beam: this is continued along the running board, and is the principal feature of the new class which are otherwise almost identical in appearance with the earlier 57's. Details of the new engines were published in a recent issue of this journal.

Reader H. J. Wright, of Lithgow, N.S.W., was behind the camera.

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WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

DIESEL OPERATION OF SOUTH LINE IS S.A.R. PLAN

By the introduction of ten diesel-electric road locomotives, the South Australian Railways consider they will achieve the most practical solution of what is becoming their biggest problem.

The South line, between Adelaide and Tailem Bend (74.7 miles) has many physical restrictions with 1 in 45 ruling grade and 10 chain curves. In addition the line is single track, except for the section between Adelaide and Belair (13.4 miles). It is over this line that the heaviest traffic in the State is being conducted and on occasions the peak capacity of the line has been reached.

It, therefore, became apparent that, before long, action would need to be taken to increase the traffic capacity of the line to keep abreast with the advance in business being handled. To accomplish this, it appeared that either track facilities or train loads would need to be increased, or perhaps some combination of both.

Any large scale duplication was out of the question because of the difficulties in obtaining labour and steel rails, whilst the steam locomotives now operating are the most powerful that the present tracks will allow. To introduce more powerful steam locomotives would mean a heavier axle load, which in turn would require relaying the tracks and strengthening bridges.

A contributing factor to the present traffic congestion is the difference in speed between passenger and freight trains. This results in sections being occupied for long periods and tends to magnify any late running.

The solution was seen in the deisel-electric locomotive which, with a high tractive effort, would be able to increase the average speed of freight trains and would allow of heavier passenger trains.

An order was placed with the English Electric Co. Ltd. for ten sets of equipment. This included a 16 cylinder "Vee" type diesel engine developing 1,760 horsepower at 750 r.p.m. direct coupled to main and auxiliary generators. Each locomotive will have four direct-current traction motors each of 310 horsepower which will be operated by Ward-Leonard type control gear.

The trucks, underframe and superstructure, together with the installation of the equipment, will be carried out at the Islington Shops of the South Australian Railways.

As shown on the illustrations last issue, the locos will be all single cab units running on the two 6-wheel swivel tracks, thus receiving the classification A1A-A1A. The engine room is entirely separate from the cab, and will be completely sealed, receiving only filtered air, introduced through filters on each side of the locomotive.

The cab will afford the maximum amount of comfort for the crew. Two fully upholstered bucket seats are provided and the engineman will be provided with ample vision through the Vee-shaped windscreen. An automatic staff exchanger will be installed on the right-hand side of the cab. For night working the instruments on the panel in front of the driver are fitted with luminous dials. At night a large nose-mounted headlight and marker lights will be used, whilst the engine number will be exhibited by inclined panels recessed into the nose with illuminated numbers on the side. Warnings and signals will be given by twin roof-mounted air horns.

For hauling trains down the steep grades, regenerative braking is to be employed, the necessary resistances and fans being installed in the roof.

The main traction generator is designed to give constant horsepower on varying voltage, and to suit this the traction motors are specially designed to give the maximum possible tractive effort for all speed of the locomotive. The auxiliary generator supplies power for field excitation of the main generator for driving the traction motor blowers and for the engine room ventilating fans.

It is intended to use these ten locomotives as five twin units coupled back-to-back, and, as such, they will handle all traffic between Adelaide and Tailem Bend. Further, it is hoped to be able to re-introduce dining car services on the "Overland" between Adelaide and Murray Bridge.

The exterior finish of these machines will be maroon and aluminium to match the new stock under construction and in service on the "Overland."

When in service, the diesel locomotives will become the "900" class and will have numbers 900-999 inclusive.

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railway workshops.

Fifteen diesel-electric locomotives for shunting, nine electric locomotives, and 110 multiple-unit cars are on order, of which 29 m-u cars have arrived. In addition, four of the nine diesel-mechanical shunters have been placed in service. For the improvement of passenger travel, 35 diesel-mechanical articulated railcars have been ordered from a leading British manufacturer. Of the order for 25 J class locomotives, six have been delivered.

Road Services.

An important activity of the N.Z.G.R. is the Road Service Branch. During the year, 50 new passenger vehicles were added to the fleet. The use of these buses has enabled passenger accommodation on certain branchline mixed trains to be withdrawn, thus affording much faster travel, and effecting certain economies in operation. To date, 19 railway routes have thus been converted. The nett loss on road services was £69,654, due almost entirely to the low fares charged in the Wellington suburban area. The use of ancillary road truck services

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has helped to relie e the freight car shortage to a marked degree, by allowing rail vehicles to be employed in bulk traffic; light commodities, such as van goods, are carried by road. In addition, the railways have been enabled to give door-to-door service between the principal cities.

Electrification.

Work on the electrification of the Wellington-Upper Hutt suburban line is progressing as rapidly as manpower and material shortages permit. Multiple-unit cars delivered from England have been used to augment services on the Paekakariki line, until the Upper Hutt services can be commenced.

Auckland Area.

The future of railway and other transport services in the suburban area of Auckland was examined by two English experts, Sir William Halcrow, and Mr. J. P. Thomas. (A report by these gentlemen has appeared and will be reviewed in our next issue.—Ed.)

General Manager's Report.

The General Manager (Mr. F. W. Aikin) toured overseas in company with a technical railway mission, and has submitted a report containing certain recommendations on the future development of the N.Z.G.R.

The principal recommendation is that the electrification of the North Island trunk route would enable the Department to cope economically with ever-increasing traffic on this heavily graded route. Traffic over this line represents 40 per cent. of all traffic carried, and is 13 per cent. greater than all traffic handled on the South Island. Unless bold measures are taken to cope economically with anticipated heavy increases in business, present operating methods will become outmoded, and give rise to staggering losses.

Punctuality.

One pleasing aspect is that punctuality has increased: of the 6,314 regular long-distance trains, 46 per cent. arrived at main centres on time, and 61 per cent. were less than five minutes late.

(For the foregoing information we are indebted to the N.Z.G.R. Annual Railway Statement for 1950).

ONCE AGAIN WE ARE RELUCTANTLY COMPELLED TO PUBLISH A COMBINED ISSUE. SUBSCRIPTIONS WILL BE EXTENDED SUITABLY. THE NEXT ISSUE WILL BE DATED DECEMBER AND, TO OVERCOME THE PROBLEM OF HOLIDAYS IN THE PRINTING INDUSTRY, CERTAIN AUSTERITY FEATURES WILL BE INTRODUCED.

COMRAILS PLAN BIG IMPROVEMENTS

TWO NEW AIR-CONDITIONED TRAINS

To modernise the Trans-Continental passenger service, the Commonwealth Railways have placed an order for two 9-car all-steel, air-conditioned trains. Vehicles include lounge, dining and sleeping cars, with a large bulk-mail brakevan. It is hoped to have these trains in service by late 1952.

DIESEL-ELECTRIC LOCOMOTIVES

Mr. Commissioner Hannaberry and several departmental officers are at present touring the United States, and have placed an order for eleven diesel-electric road locomotives to replace steam locomotives over the Kalgoorlie-Port Augusta section. It has been revealed that, of all the freight tonnage, over one-quarter was departmental coal and water transport. With diesel-electric operation, it is expected that large economies will be effected, and that the investment will be redeemed within five years.

OLD STOCK MODERNISED

Existing passenger equipment is to be equipped with air-conditioning plant, now on order at a cost of £66,000.

HIGH-SPEED RAILCARS

Three diesel-hydraulic railcars of the Budd RDC1 model (see previous issue) are on order from the Budd Mfg. Co., Philadelphia, U.S.A. These cars have a top speed of 83 m.p.h., and it is believed that the interiors will be altered to provide a limited number of reclining seats.

NARROW GAUGE DIESEL CARS

Tenders have been invited for eight diesel railcars for the 3 ft. 6 in. gauge Central Australian railway, following inspection of Walker railcars on the Victorian Railways.

NEW NORTH LINE SOON FOR N.S.W.R.?

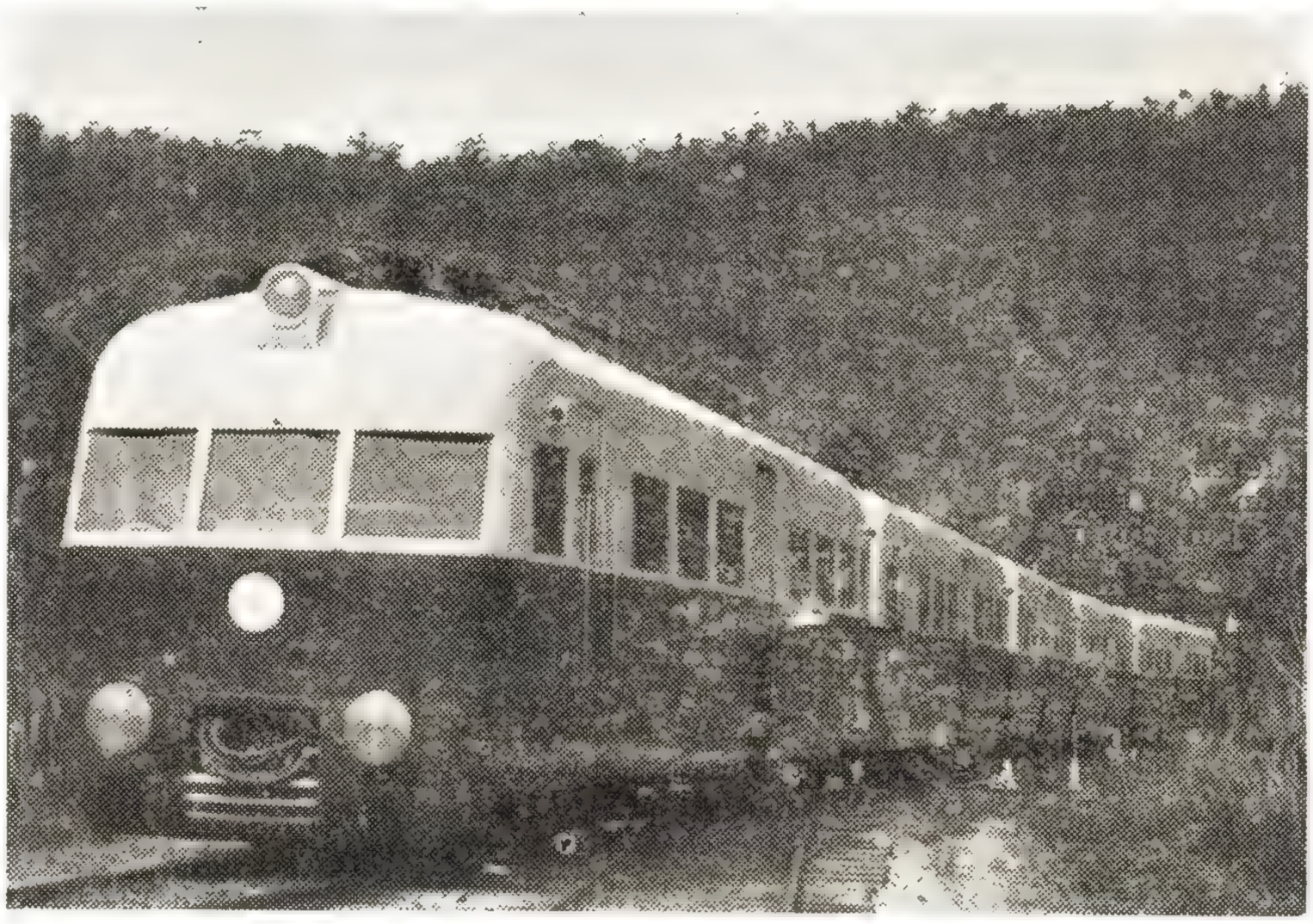
Plan to Avoid Floods

The need for constructing an "all-weather" railway to carry the output of the northern coalfields was made apparent during the disastrous floods earlier this year. The building of a line avoiding Maitland has been approved in principle by the State Government, and it now remains to decide on the route to be taken.

At present, it would appear that two alternative routes, Cessnock to Cockle Creek, and Minimbah to Morisset, have equal merit. The former route was first surveyed in 1913, when it was intended to build a line via Mulbring and Kearsley, some 20 miles long. The only formidable obstacle would be the need for a tunnel ¾-mile in length.

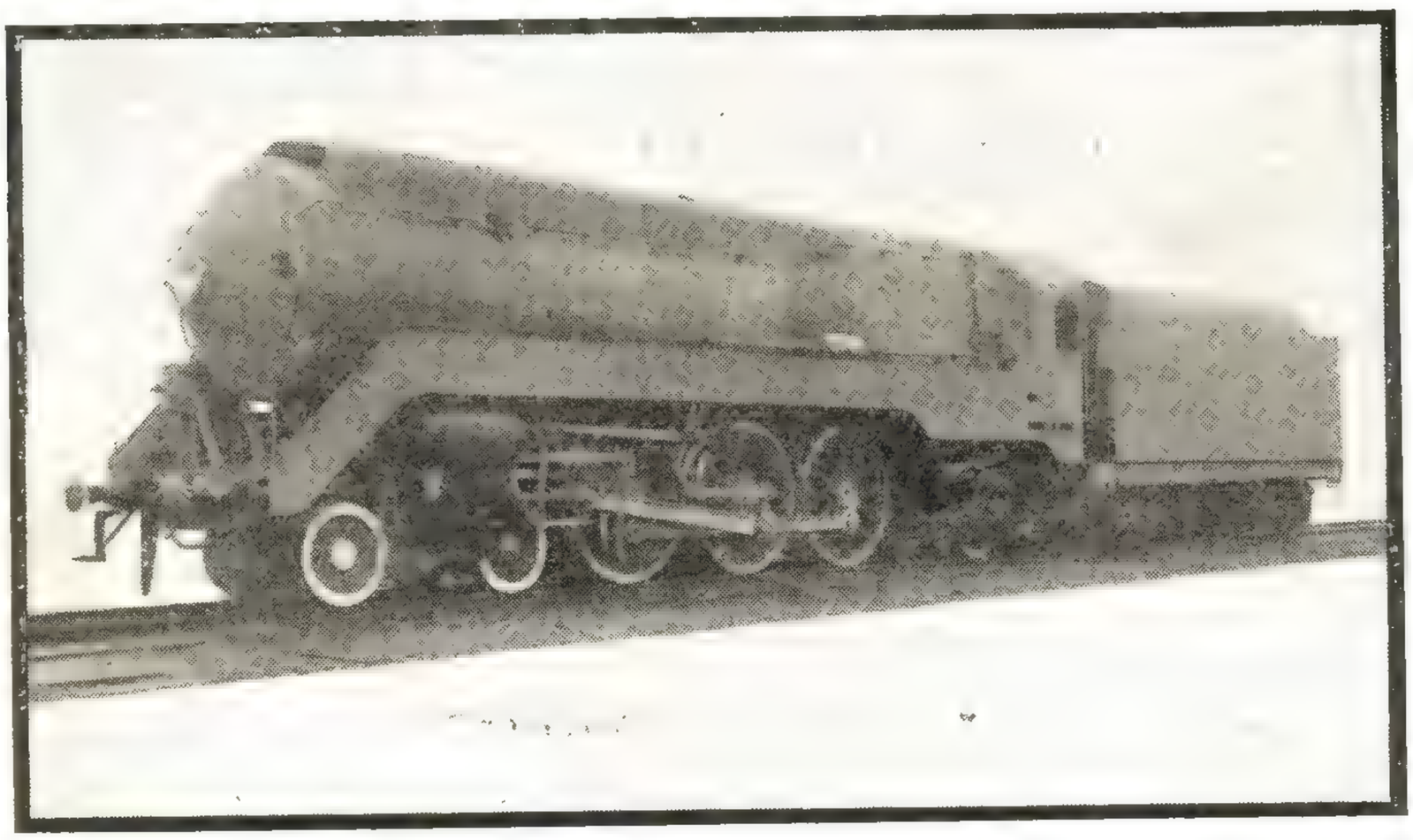
Local interest are giving much support to their particular proposals, and controversy is rife.

Rolling Stock Parade



Five-car diesel train of the Tasmanian Railways. These cars, Nos. 20-24, were built in 1939 by the Commonwealth Engineering Co., of Granville, N.S.W., and have proved so satisfactory in service that the six new articulated cars mentioned in our last issue were ordered. Motive power is by 153 h.p. engines.—Official T.G.R. photograph).

About Engines



DRESS SIDES FOR LOCOS!

An interesting comparison is afforded by these two views of 38 class 4-6-2 express passenger engines of the New South Wales Railways. The upper picture, from an official N.S.W.R. photograph, is of No. 3801, the class leader and one of the five streamlined examples built by Clyde Engineering Co., Granville, N.S.W. The lower illustration, from the collection of Mr. David Burke, shows one of the 25 unstreamlined members of the class, all of which were built in the railway workshops at Eveleigh and Cardiff. Although the streamlining is not considered worthwhile, it is interesting to note that publicity pix invariably show one of the streamlined locos!—(Block of No. 3801 kindly lent by "Truck & Bus Transportation").

QUEENSLAND GETS NEW GARRATTS

During mid-September, S.S. "Peter Dal" arrived at Brisbane with ten of the new Garratt locomotives for the Queensland Railways. These locomotives are 4-8-2 2-8-4 machines, as illustrated in our June/July issue.

Initially, ten of these locomotives were ordered, in 1947, from Beyer Peacock and Co. Ltd., of Manchester, England, but to make good the motive power deficiency the order was subsequently increased to thirty. As prompt delivery was a requirement, Beyer Peacock arranged that the additional twenty machines would be built by a firm holding rights to manufacture Beyer-Garratt locomotives, namely, the Societe Franco-Belge de Materiel de Chemins de Fer, of Raismes, France.

The ten locomotives delivered are of English manufacture, and represent the latest example of the now highly-developed Garratt design. The design was executed by Beyer Peacock to certain specifications of the Chief Mechanical Engineer of the Queensland Railways.

It is intended to use these engines for both freight and passenger service on the 1,043 miles between Brisbane and Cairns, including hauling the "Sunshine Express."

In addition, with the nominal axle load of 9.64 tons, these engines will be able to haul heavier loads over secondary lines, and will thus eliminate the consolidation of light trains at junctions for haulage over the main lines.

Compared with existing motive power, the Garratt represents an increase of nearly 50 per cent. in tractive effort over the previous most powerful type.

The complete order of Garratts has been allotted road numbers 1001-1030, inclusive, and it is expected that the engines will cost in the vicinity of £45,000 each.

VICTORIAN LOCO. NEWS

N. Class Re-numbered.

Details of the re-numbering of the original 30 N class locomotives built at Newport Workshops between 1925 and 1931 are given hereunder:—

Nos. 110-139 will become 400-429, but not consecutively. The prototype engine, No. 110 (ex-booster equipped), has become No. 419; others are numbered in order 400-418, and 420-429. Between 10/8/50, and 27/9/50, Nos. 403, 406, 408, 410-2, 414, 418-20, 422-3, 425-6, and 428 appeared.

The twenty modified N class now under construction or in course of delivery from Newport Shops (this batch only will be fitted with sheet steel pilots (cowcatchers) and German State Railways design of smoke deflectors) will occupy Nos. 430-449, whilst the fifty engines being supplied by the North British Locomotive Co. will carry Nos. 450-499.

New Locos in Service.

To date, nine of the new N's are in service, taking up duty as follows:—450, 17/8; 451, 18/8, 452-3, 22/9; 458-9, 13/9; 460-1, 15/9 (all imported). No. 430, ex-Newport, was placed in service on 5/7/50.

Y Class Altered.

To allow for the re-numbering, Y class 0-6-0, No. 400, was re-numbered 100. This engine is attached to Geelong Depot.

First "R" Here by Easter.

Latest advice from Scotland indicates that the North British Co. will commence erecting the first R class 4-6-4 passenger loco. during November, and that it can be expected in Victoria by next Easter.

Water Treatment Tank.

K class No. 176 left Ballarat Shops on 1/9/50, following a heavy overhaul, which included provision of a water-treatment tank.

NEW SOUTH WALES RAILWAYS

Another "58"

New 4-8-2 freight locomotive No. 5804 ran trials to Penrith and return, as "light engine" on 21/9/50, and is now in service.

Diesels from U.K?

According to press reports, so far unconfirmed, the New South Wales Minister for Transport (Mr. Sheahan) has approved an order for 40 diesel electric road locomotives from Great Britain.

QUEENSLAND RAILWAYS

New Garratts Allocated to North and West.

The new Beyer-Garratt locomotives were unloaded on to the Pinkenba Railway Wharf between the 4th and 14th of September last. They were in three separate sections, viz., leading engine unit, boiler unit, and rear engine unit, and were assembled on the wharf for hauling to Ipswich Workshops. The flat grey undercoating in which they were delivered has been covered with a coat of Midland Red, with one-inch gold lining on the cab, cylinders, water tanks, and coal bunker. On each water tank are large yellow initials "QR" blocked out in black.

These engines bear the builder's numbers 7341-7350, inclusive, and have been allotted to Rockhampton; five will run to Bundaberg, over the main Northern line, and the other five will operate on the Western line as far as Emerald.

Engines Withdrawn.

The following engines were withdrawn from service during September, 1950:

B17 class, Nos. 613, 676, 677; B16½ class, 204; C16 class, 517 (following an accident); B13 class, 79, 130, 175 (thus rendering extinct this class of 4-6-0 tender engine on the Queensland Railways. Five B15-converted class, numbers unknown, have also been withdrawn.

New Colour Schemes.

At the end of October, 1950, the following engines were in the new liveries:

34 B18¼ (green, red trim), 8 C17 (brown and green), 10 Beyer-Garratt (midland red, gold lining), 6 DD17 (dark blue), 1 DD17 (light blue).

Loco. Hired.

B13 class, No. 79, reported withdrawn from service, is on hire to the Bauple Sugar Mills, with a view to possible purchase.

TASMANIAN DIESELS

New Locos Under Test on Main Line.

The first two of the 32 diesel-electric locomotives for Tasmanian Railways were unloaded from the "Orari" in Hobart during the first week in September. Four more were delivered late in September, and it is hoped to have 18 in service by February, 1951. The two locomotives working in multiple were engaged in test runs with heavy freight trains between Hobart and Launceston. The purpose of the tests was to determine the allowable ruling load, trains of up to 307 tons being handled. The load for a Q. class 4-8-2 (tractive effort 25,800 lb.) over the main line is 210 tons. The diesels were giving superior haulage power because of the ability to develop maximum horsepower at very low speeds.

It is intended that, as diesel locomotives become available, they will take over dual service, working on the Main line, the Derwent Valley line and the Weste.n line.

During the periods between freight trains in Hobart, the locomotives, as single units, were employed on running suburban passenger trains to Risdon.

The Tasmanian Railways have the honour of becoming the first Australian Railway to employ diesel locomotives in mainline service.

NEW LOCOS SUCCESSFUL

Tasmanian Diesels.

The new diesel-electrics of the Tasmanian Government Railways (class X) show signs of being an effective answer to some of the local problems, writes Mr. L. G. Farmer. We had our first glimpse of one here recently, when X2 hauled the afternoon Launceston-Wynyard passenger. At several places she had to "wait for time." Load was four cars and van. The return trip was on the morning train next day.

THE AUSTRALASIAN RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY

(Founded 1933)

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MEETINGS

Street, Sydney, on the second Tuesday in each month. All visitors are welcome. In Melbourne, the Society's meetings are held at the Railway Institute, Flinders Street, Melbourne, on the fourth Thursday in the month. All visitors are welcome.

FINANCIAL

The subscription rates are fixed at 21/- per annum, which includes the Society's printed Bulletin. Subscriptions are payable in advance. Members in Victoria, South Australia, Western Australia or Tasmania should remit to Victorian Treasurer, and all other members to the General Treasurer.

GENERAL

Back numbers of the Bulletin are still available, and members interested should write to Mr. G. C. Taylor.

Communications in connection with the Bulletin should be sent to Mr. M. A. Park, who will be pleased to receive articles or notes on railway affairs, both historical and current, which might be suited for insertion in the Bulletin.

INTERSTATE REPRESENTATIVES

In addition to the Victorian Branch, the Society is represented in South Australia and Tasmania by the undermentioned members, who are official representatives in their respective States:—

SOUTH AUSTRALIA: Mr. O. Thomas, 31 Torrens Rd., Hillside, S.A.
TASMANIA: Mr. K. Flood, 140 Wellington St., Launceston, Tas.

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NEW TASMANIAN SERVICES

Passenger Diesels on Main Line.

As from Monday, September 25th last, Tasmanian Railways instituted a new diesel train service over the Hobart-Launceston main line. The articulated motor trains leave Hobart at 9.30 a.m. and 5 p.m., arriving in Launceston at 2.30 p.m. and 9.50 p.m. On the return, trains leave Launceston at 11.30 a.m. and 5.25 p.m., arriving in Hobart at 4.28 p.m. and 10.22 p.m. respectively. These services are daily except Sunday, and the fares are 22/- single and 39/7 return.

Booking Charge Dropped

As from the 9th October the practice of charging for seat reservations was dropped from all passenger bookings. This serves a twofold purpose, encouraging passenger travel and enabling the Railways to better gauge the loading of passenger trains. It has been revealed that for the year ended 30th June last, passenger revenue dropped by £29,000 and the nett loss on the State railway system amounted to £806,025.

NEW HOBART TERMINAL

Plans Submitted.

The Tasmanian Railway Department has submitted plans to the Parliamentary Public Works Committee of a proposed new station at Hobart.

Features of the new station will be a pedestrian subway giving connection to Park Street, and a high level roadway to provide for taxi and private parking, also giving access to the parcels office.

It is intended to erect the new station on a site adjacent to that existing, the latter being retained

"Railways in Australia" Competition No. 1
ENTER NOW!

A correspondent, whose modesty impels his anonymity, was moved to compose the "examination paper" set out hereunder, after reading a newspaper account of the stealing of a locomotive and several freight cars from a Moree, N.S.W., railway yard. After running for some 60 miles, the characters concerned left the whole outfit on the main line, where it was found by the considerably astonished crew of a freight train. Fortunately, no casualties resulted.

Our correspondent has generously offered a prize of one year's subscription to "Railways in Australia" for the most humorously appropriate answers received. In addition, we are giving a similar prize of one year's subscription to the overseas reader who sends in the most humorous replies. Results will be published in "Railways in Australia," together with the prize-winning entries.

Entries should be addressed to: "Competition, c/- Traction Publications, 29, Seymour Grove, Brighton Beach, S.5, Victoria." Closing dates are: AUSTRALIA and NEW ZEALAND, 1st January, 1951; OVERSEAS, 1st April, 1951.

TIME ALLOWED: All one night shift.

MARKS: Forget about them!

1. A night passenger train drawn by two engines develops a hot box on one of the cars. The train is brought to a standstill in the middle of the Woop Woop/Snake Gully section, to enable first-aid to be rendered to the affected box. While the crew of the train engine is thus engaged, thinking the usual unprintable thoughts, the driver of the leading engine, unobserved, removes the section staff from the train engine, and his fireman, quietly uncouples their locomotive. With the staff in their possession, they climb aboard and buzz off, thus leaving an apparently complete train standing in the section without a staff. At Snake Gully, the signalman, knowing nothing of the incident, had placed the Snake Gully/Stinkwood Flat staff in the automatic exchanger, the truant light engine exchanging the stolen one while running through non-stop. On approaching Stinkwood Flat, however, the crew of the light engine is not at all surprised to be stopped at the platform. They deliver up the staff to the amazed signalman, remarking: "That'll give 'em all time to cool off!"

You are required to:—

(a) Discuss the possibilities that could arise from such a situation.

(b) Spin a suitable tale for the inquisitive signalman's benefit, remembering that higher officials might become interested in it; in fact, someone might even "get it in the neck!"

2. You are on "sleepy" shift in charge of an isolated up-country station, where your department still clings affectionately to the old "Staff and Ticket" idea. It is a stinking hot night and your frame of mind is not improved by the recollection of a convivial cool-drink party you had to leave to come on duty. Upon enquiring from your next station concerning the running of the "Midnight Horror," you hear this through the phone, all in one breath, and partly in an undertone: "Running on fifteen two time with the second pair of aces following close behind one for his knob." Hoping for the best, but anticipating the worst, you pull off the sticks and sit and swelter. In due course, the first division passes your station non-stop, slowing down sufficiently to exchange staff tickets with you. On returning to the light of the office to cancel the ticket, you find that you have been given the Ace of Spades!

(a) Describe your feelings.

(b) What would you do about it?

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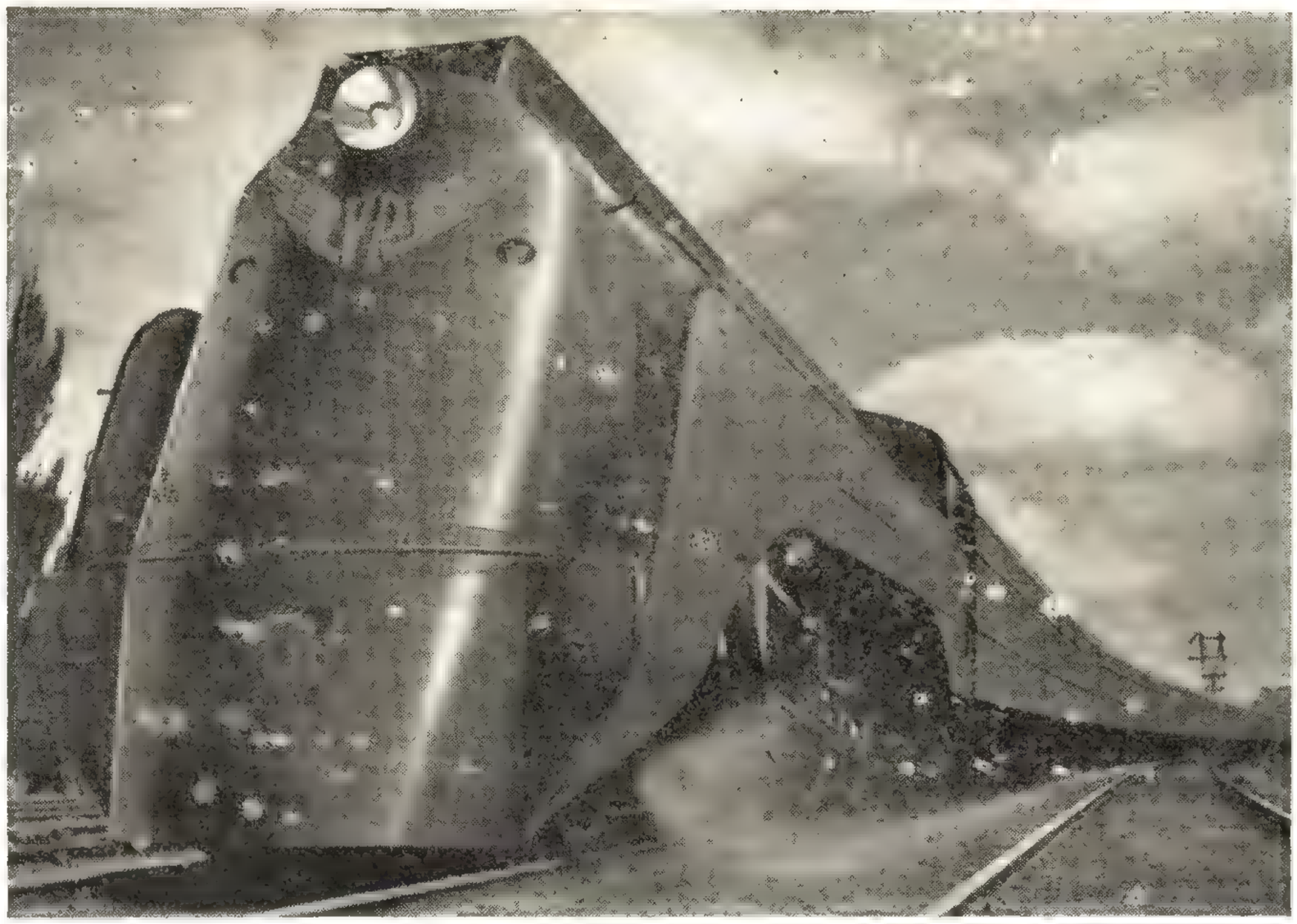

This much-used publicity shot of the Victorian Railways' crack "Spirit of Progress" was taken many miles from the North-Eastern line on which the train runs. Headed by streamlined S class 4-6-2 "Edward Henty," the blue-and-gold flier was on exhibition in Ballarat, back in 1937.—(Courtesy, "Truck & Bus Transportation").

HOLIDAY BY RAIL

By C. Einsiedel

My idea of a perfect holiday is to travel around the country by rail, on a free pass, but, as I am not eligible for such a valuable concession, second preference goes to the purchase of an All Lines ticket! The latter has the advantage that there are no restrictions on its use during the period for which it is current.

All Lines tickets are issued by the various State systems for short terms starting from any date. They are available for one month in Western Australia, South Australia, New South Wales, and Queensland, and for a fortnight in Victoria, ...e, however, a weekly extension ...be obtained on a pro rata basis.

N.S.W.R. Selected.

Having previously toured Victoria and South Australia, the obvious choice for the next onslaught was New South Wales, which I toured in October of last year. First step was the purchase of the ticket, the appearance of which left me in some doubt as to whether it was indeed the correct one. In fact, I ran into a spot of bother with it once, but more of that later.

Before starting the trip, an important item was the planning of the itinerary to enable overnight accommodation to be booked in various parts of the State. This is absolutely essential, as I found that a room could be obtained in very few country towns where I stayed. I happened to have a N.S.W.R. country timetable for 1942 and used this as a basis for planning the tour, as the latest available could not be obtained. However, Public Relations forwarded a booklet with a list of services as at the end of August, 1949, and was most helpful in supplying other publications, which enabled me to get all possible interest out of the trip. It was found that few alterations from the 1942 schedules had occurred; of course, the map given with the timetable was much studied.

(Planning such an itinerary in Victoria at present would be no easy task, as no public folder for country trains has been issued for over seven years, during which time the services have altered greatly.)

As my home station (Monomeith) has only a petrol-electric service to Melbourne in the mornings, I decided to commence the trip on the 6.55 a.m. from Yarram on the south-east line, joining at Lang Lang, 47¼ miles from Melbourne. This line is hardly calculated to impress visitors! Over metals rising no higher than 210 feet above sea level, at East Oakleigh, and with no grade worth mentioning, the schedule, based on a 260-tons load, allowed 51 minutes for the 28¾ miles to the first stop at Dandenong. Thence into the electrified area 21 minutes are allowed for the 12 miles to Caulfield, after which the 6½ miles run into Melbourne is allotted. Leaving Lang Lang 3 minutes late, A2 (4-6-0) No. 892, with a load of 230 tons, picked up 2½ minutes on the run to Dandenong, during which there were four slowings for manual staff exchanges. Exceeding the stopping time by half a minute, and taking a minute more than the liberal allowance on the next section, the arrival at Caulfield was 3 min. late, due to a couple of severe permanent way slowings. The final stage into Melbourne was run so cautiously that no time was regained. Such a run hardly qualifies for an article on "Locomotive Performance," but it is part of the overall picture of railways in this country.

However, I went from Victoria's worst express run to Australia's finest that same night, on heading north in the "Spirit of Progress" ("SOP" in the Working Timetable). The "Spirit" has now been on the run for over eleven years, and is still without a rival for both speed and length of non-stop run—190 miles. Its load, too, is "way out in front." When the train first operated, the schedules of 230 minutes Down, and 215 minutes Up, were based on a load of ten cars (499 tons). After some time, the load was increased to eleven cars (547 tons), and the time for the Up direction eased by five minutes. Except on odd occasions,

WATTLE PARK

FOR THE FINEST SPORTING 9-HOLE GOLF COURSE IN MELBOURNE. TRAM FROM BATMAN AVE. (ROUTE 70)

11 cars is now the regular load. Of these, apart from the van, and the diner, nine passenger cars provide seats for 273 1st class, and 192 2nd class travellers.

(To be continued)

OBITUARY

Maj.-Gen. A. C. Fewtrell, D.S.O.

It is with deep regret that we record the passing of Major-General A. C. Fewtrell, who was, until his death on 17th October last, Chief Civil Engineer of the N.S.W. Railways Department.

Mr. Fewtrell joined the Railways in 1908, and served in both World Wars. He had a distinguished military record, being awarded the D.S.O. in the 1914-18 war, whilst in 1940 he was appointed G.O.C. of the 1st A.M.F. Division, later becoming Base Commandant at Eastern Command.

As Chief Civil Engineer he had many important works in his charge. Following the completion of the new Hawkesbury River railway bridge to his designs, his paper on the subject was awarded the Baker Gold Medal by the Institute of Civil Engineers (London) in 1949. The Baker Medal is a triennial award for the most outstanding engineering work in the British Empire, and Major-General Fewtrell was the first Australian on whom this honour was bestowed.

He was largely responsible for the design of the Eastern Suburbs Railway and, following the deadlock over the route through Rushcutters Bay, he prepared four alternative schemes.

Major-General Fewtrell, who was 65, passed away in the Royal North Shore Hospital.

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for use as office space for the Railways Department.

It will be recalled that the provision of a new station for Hobart at an estimated cost of £60,000 was recommended in the Chapman Report of 1948.

N.S.W.R. ITEMS IN BRIEF

The first of the 40 ton capacity hopper cars for the Western coal traffic has arrived from Germany. It was supplied in sub-assemblies to a N.S.W.R. design and was erected in Departmental Workshops. The vehicle entered revenue traffic on the 10th October last, being loaded at the State Mine, Lithgow. Under close watch from Railway Engineers, it was test-run to Sydney on the same day. Large scale deliveries of these vehicles are expected shortly.

Tenders are being called for earthwork in connection with the duplication of the main Northern line. The sections open for contract are between 152 and 156 miles, near Nundah, and between 157 and 160 miles near Ravensworth.

As from November 1st, certain rail charges were increased. Seat reservations are now 1/3 instead of 1/- as previously. Passenger fares have advanced by approximately 15 per cent.; to quote an example, Sydney to Newcastle first return is now 28/4 compared with 24/3 as previously. Corresponding increases have been made in periodical and special excursion tickets, although platform tickets and sleeping car charges will not be increased. Freight charges have advanced by 16-40 per cent., depending on the commodity and the distance hauled. Certain decentralised industries and public bodies have been exempted from the increases in rates. It is hoped that these increased charges will help to offset the impending £5 million State transport loss.

The emergency crossing loops at Koree, Yeenan, Boonia, Mirrabee, Gibbial, Iricar, Jamma, Dewarra and Tuina on the Western division have been abolished, the points and signalling equipment being removed in September last. These loops were installed during 1941 to handle wartime traffic.

Electric train staff working has been replaced by ordinary train staff on the sections Barellan-Binya and Binya-Yenda on the Temora-Roto line.

The Widemere Quarry branch line has been closed to traffic and the connection at Fairfield (on the Granville-Cabramatta line) has been removed.

Fan Mail

J. KNOWLES, Dalby, Qld., Missing issue sent. Shall be interested to see B18¼ photo.

A. R. STANBURY, Unley, S. A., Thanks for pix; shall use if funds permit. Change of address noted.

E. G. CARTER, Magill, S.A., Order noted; book will be advertised.

J. L. N. SOUTHERN, Port Kembla, N.S.W., Thanks for news — being used; order noted.

R. STEFANSON, Hurstville, N.S.W., Thanks; best wishes for your success— I have vivid memories of the same ordeal.

W. SIMPSON, Mt. Colah, N.S.W. Present plan is to change locos at the border, as is now done with steam power. See last issue for details of S.A.R. mainline diesels; still awaiting full particulars of the V.R. engines. Roomette car will be illustrated when good picture available.

G. COBHAN, 5 Franklyn Rd., Ponsonby, New Zealand. New address noted. Thanks for returning magazine.

John BUCKINGHAM, Cheltenham, S.A., Cuttings and information most welcome.

D. RICKETTS. Port Nelson, N.Z., Order for loco book noted.

Edward S. BARNES, Santa Monica, California. Thanks for interesting letter; back numbers sent, as requested.

Robert WALSH, Gordon, N.S.W., Thanks for cutting and comments.

BOOK REVIEW

THE AMATEUR'S LATHE

By L. H. Sparey.

(The Drysdale Press, Leicester.)

Reviewing this book is a novel experience—past reviews have always concerned subjects with which I am familiar; of lathes, however, I have always stood in no little awe. It is a tribute to Mr. Sparey's work that, after reading it, I feel that it would now be possible to approach one on at least equal terms!

As well as a lucid, detailed account of lathes, their components, functions, idiosyncracies, and possibilities, Mr. Sparey provides chapters on precision tools, gauges, and metals used in turning. The book is well illustrated. For the amateur who contemplates purchasing a lathe, we can not imagine a more useful guide and mentor.

(pp., 9 in. x 5¾ in., hard cover; our copy McGill's Agency, 20/-.)

A BOOK OF MODEL RAILWAYS

By P. R. Wickham.

Percival Marshall and Co. Ltd., London.

The author of this, the newest book on model railways, apologises for its appearance, observing that it was prompted by the discovery that others were out of print. My impression was that there has been a spate of them! However, no excuse is needed, for the book is most interesting, if not notable for literary style, and is refreshingly different from contemporaries. Particularly pleasing are the chapters on scenery and that important, but sadly overlooked feature of modelling, the "idea behind the railway." Unusual in an English work is a chapter on overhead wiring. The author, too, has given considerable space to American practice. Diagrams are adequate and the photographic illustrations, especially of scenery, attractive.

(Our copy, Meadmore Models — 22/6.)

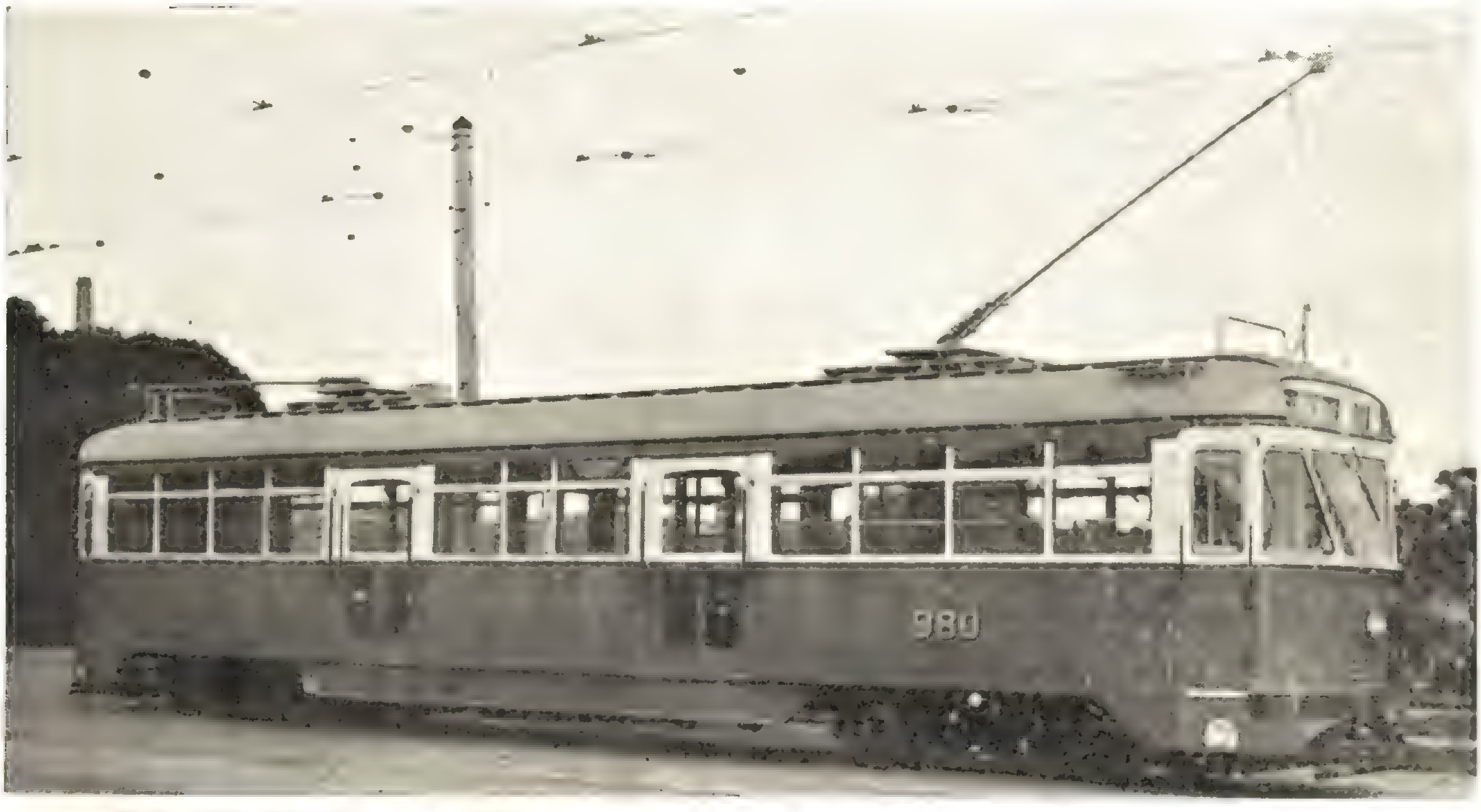
WORLD'S SMALLEST

Mr. Meadmore tells us that he now has ample stocks of "The World's Smallest Public Railway," the fascinating account of the famous Romney, Hythe, and Dymchurch line reviewed in this column some months ago and for which the demand exceeded the supply.

ELECTRIC TRACTION

TRAMWAY — TROLLEY BUS — ELECTRIC RAIL

Formerly published separately as "Tram Tracks"



MORE MELBOURNE P.C.C. PICTURES

We are indebted to the Tait Publishing Co. for the blocks which enable us to reproduce these official photographs of the P.C.C. equipped car, No. 980, of the Melbourne & Metropolitan Tramways Board. The interior view does not do justice to the car, which is much less austere than the illustration suggests.

We have already published a view of the trucks used on this car, but the illustration given here, with accompanying notes, is really good. Mr. K. S. Kings, Joint Secretary of the A.E.T.A., was the photographer in this case.

COMPARISONS ARE ODIOUS !

An American View

The fallacy of making comparisons between modern buses and obsolete, old street cars is so obvious an error that it seems hardly necessary to point it out to any thinking person. It is surprising, therefore, to find that this is still being done in some communities with the hope, evidently, that such comparisons will appeal to a large number of naive people and result in the condemnation of the street car as a modern transit vehicle.

The modern P.C.C. car has changed all of this. The new P.C.C. car outmodes the old street car, as completely as a new diesel streamliner outmodes a wood-burning locomotive — or as completely as an ocean-fying stratoliner outmodes Lindberg's little 1927 model plane — or as completely as a modern trolley coach or bus outmodes the cumbersome vehicles proposed in the early twenties.

When comparison of service rendered by modern buses and trolley coaches is made with service by modern P.C.C. cars, and the public is given an opportunity to ride each type of vehicle and judge for themselves — it's a different story.

The St. Louis Car Company has recently emphasised these fundamentals in its advertising. Quite pertinently it is pointed that the ultra modern P.C.C. car is not just another street-car, and it should never be confused with the older, obsolete type of street car. Therefore, any statistics or experience involving

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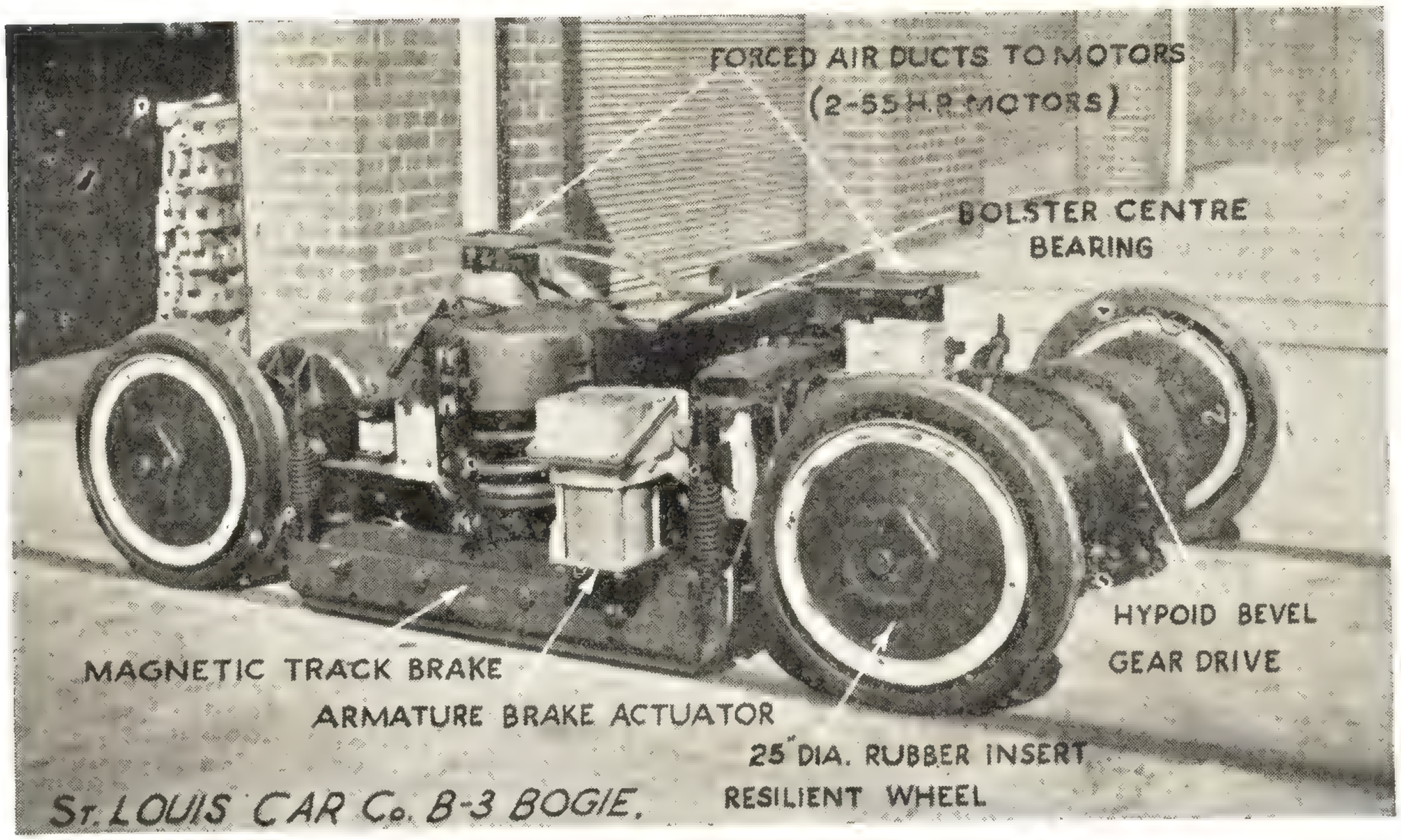

ST. LOUIS CAR Co. B-3 BOGIE.

the old, obsolete type street cars should never be used in comparison with any modern equipment.

Progress in transit vehicles in recent years has been such that all vehicle manufacturers are now willing that fair comparisons be made between all types of transit vehicles. Each vehicle has its proper and economical place in transit service in modern cities. There is no need to make comparisons by the unfair method of comparing old vehicles of any type with new vehicles of another type.

So wrote Mr. Claude L. Van Auken, publisher of "Mass Transportation," an American journal of first rank, covering city transport in a lavish manner. It was a courageous observation, despite its obvious truth, for "Mass Transportation" is almost smothered in a welter of lavish advertising for "trolley coaches" and buses. In fact, in the very issue in which these words appeared, is a full-page advertisement which declares: "Rails were good . . . BUT TO-DAY IT'S RUBBER" and hails the running of the last tram in Toledo, Ohio, Toledo, needless to say, never had PCC cars.

OVERSEAS NEWS

Korean Tramways.

A friend from South Korea residing in Melbourne gives some details of tramways in his country. There are four tramway systems in Korea—at Soeul, Pyongyang, Wonsung and Pusan. A frequent traveller on the Pusan system, he tells that there are four routes — Railway Station to Warm Springs (TONGNAE), 6 m.; Railway to MOK TO, Railway to Public Park (UNDONGCHAN), both about 2 m.; a branch from the Warm Springs route to BUM ILL STREET, 1 m. A short single line city link connects the Railway direct with Government Offices (DO CHONG), a section on the Public Park route. The city area is mainly double line, and the cars that operate are end-loading saloons of both S.T. and D.T. types. The operating authority is the SOUTH KOREAN ELECTRIC CO., known locally as KAMSON CHONGGI HOISA. One depot is situated near the Public Park terminus, whilst the other is half-way to Warm Springs.

Tramway News

From Australia and New Zealand

Editor — L. Marshall-Wood
111 Esplanade, ELWOOD, S3, Vic.
(Contributions Invited)

MORE FARE INCREASES

Sydney Highest.

The rising spiral of prices since the war has produced another wave of increased fares on Australian transport systems and, with the higher basic wage due, further rises are contemplated. Government transport in New South Wales has been affected most; tram and bus fares were increased there on 9th October. The length of tram sections remains unchanged, but overlapping sections have been abolished; fares per section have been increased so steeply that Bondi residents now pay 11d. instead of 6d. for the tram ride to the city. The rise has been condemned sharply in Parliament, but the Government is faced with an estimated joint deficit of rail, tram, and bus services of £10 million.

Melbourne Soon.

The Victorian Government is expected to sanction 1d. increase on all tram fares (except on the isolated Footscray section, where fares are already above the standard rate), as recommended by the M. & M.T.B. Chairman (Mr. R. J. H. Risson). Tramway buses are included, and private bus owners have requested further increases in their fares, already dearer than the Board's charges. Railway fares will be increased at the same time, but all changes are likely to be deferred until the end of the marathon railway strike.

Other Systems.

Increases of ½d. per ticket are expected on the two tramways operated by the Victorian Railways in Melbourne. The Hobart and Launceston councils are likely to increase fares on their respective systems also, as is the Municipal Tramways Trust, Adelaide.

NEW SYDNEY TRAM.—Photographs by reader, P. C. Lambert, show No. 1988, first of 250 new R1 class cars leaving the Commonwealth Engineering Co. Works, at Clyde, N.S.W., on the Transport-Department's "Lizard" transporter, and arriving at Randwick Workshops propelled by R class No. 1909. The "Lizard," hauled by the giant Kentworth wagon, conveyed the car to Haberfield, where it was placed on the tram tracks.

KING STREET TO GO
New Sydney Terminal.

After several proposals in recent years to eliminate trams from this busy Sydney street, work has been put in hand in connection with the final plan to terminate the Watson's Bay route at Queen's Square, using a single-line balloon loop around the statue of Queen Victoria. Track in King Street will remain for the present, in case the new scheme should not prove successful. (A diagram showing the new arrangement will be found elsewhere in this issue.)

The Minister for Transport (Mr. Sheahan), replying to copious criticism of the scheme, states that the idea was approved by a "conference of all traffic authorities."

WANGANUI SYSTEM CLOSED

On September, 1950, the tramway service, at least the remaining sections, were closed, and the buses of Greyhound Buses Limited took over, under the control of Mr. G. R. Holmes, formerly Superintendent of the Tramways. Wanganui residents did not fail to give the cars a rousing send-off, and the valedictory trip was made by car 28 (one of the D.T. "Takapuna" Saloons), on the route to Castlecliff. The car arrived at 9.45 p.m., and after farewell speeches by the official party, and after being showered by confetti and bedecked with sprays and streamers, 28 departed back to the depot at Wanganui with the local band playing "Auld Lang Syne."

A feature of the last day was the rejuvenation of an old steam motor which had been derelict at the depot. This 0-4-0 11 inch Baldwin locomotive (formerly No. 100 of the N.S.W.G.T.) was acquired by the contractor who was building the Castlecliff route in 1914. This venerable machine, now nearly 60 years old, ran along the tram route towing two of the electric trailers amid scenes of great interest and enthusiasm.

The Wanganui tramways, owned always by the City Corporation, were opened on 11/12/08 to standard gauge, and sections were added up to 1923, when routes reached Castlecliff, Wanganui East, Gonville and Aramoho Park, a total route length of 14 m. 24 chains. A variety of cars were built, including Californias and Saloons, and convertible trailers. In 1928 there were 34 cars on the register, and at the time of closing, 20.

MELBOURNE, Vic. (M. & M.T.B.):—

The M. & M.T.B. have announced that, although the Latrobe Street line is completed, it will not be opened until a link to it is built in Spencer Street from the existing Spencer Street terminal at Lonsdale Street. This work is now under way, and involves the lifting of 1/8 m. of disused cable line (old West Melbourne route).

Recently outshopped from Preston are some new SW6 cars. 964 on 28/9/50 (to Glenhuntly Depot); 965 on 23/10/50 (to Hanna Street); 966 during the first week of November. Assembly of bodies up to 977 is in progress. Rail Grinder No. 1 was returned from the isolated Footscray lines on 27/10/50.

The Batman Avenue terminal at Princes Bridge is to be extended in the near future. At present the capacity is four cars. This terminal serves routes 70-77 and 80. Flashing light signals now protect Malvern Depot junction in Glenferrie Road.

MELBOURNE (V.R. Tramways):—

In conjunction with the State-wide V.R. railway strike, V.R. trams ceased operation from 16/10/50. Considerable trouble was expected at Black Rock in cleaning stones and mud from the tracks, owing to the deplorable state of the track and roadway.

VICTORIA—S.E.C. Tramways:—

Rumour suggests that the S.E.C. may purchase a number of the remaining maximum-traction drop-centre cars at present out-of-use and stored by the M. & M.T.B.

LAUNCESTON—Tasmania:—

The serious state of the tramway service, now in progress of being converted to trolleybuses, has aroused the ire of the citizens. A mass meeting of local progress associations have condemned the Council for the deterioration of the once efficient tramway service, and stated that the new trolleybuses will be a "burden to the citizens." The Mayor, in reply, said that the Council wanted the co-operation of all during "this difficult transition period." He added that when Sir William Goodman recommended the trolleybuses several years ago, it then would have cost more to rehabilitate the trams. Since then the rising costs have been out ide the Council's control. Three derailments in one week in Invermay Road have brought to local citizens the serious nature of the tracks.

HOBART—Tasmania:—

The H.M.T. have decided to close the North Hobart route in January. It is claimed that the Council will have £1,500 a year and will not have to pay for costly rehabilitation. The route is used by the Newtown trolleybus for most of the way, and this is expected to handle any passengers normally travelling by the tram. This single track route—about 1½ m. in length—was opened on 8/5/16, and services have always been through-routed to West Hobart.

KALGOORLIE—West Australia:—

It is with deep regret that we record the passing of Mr. W. H. Stanley, who was manager of the Kalgoorlie Electric Tramways Ltd. from March, 1903, till April, 1947, when the system was acquired by the E.G.T.B. He was formerly Locomotive Inspector of the W.A.G.R. In his time, he has seen the population of Kalgoorlie and Boulder dwindle to a fraction of its former size due to the depression and reduction in gold-mining activity. Thus, he had to make difficult decisions to abandon much of the once large tramway service.

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OPERATION "STRIKE"
Melbourne Trams Handle Crowds

By K.S.K.

Yes, it's on again; Melbourne has another transport strike! This time the railways have "gone out." The whole of Victoria is effected, together with other parts of Australia, for varying periods. It began on Monday, 16th October, 1950, and is still going. These few lines are for the purpose of recording some of the resulting events, not to argue the merits or defects of the "direct action" taken.

Monday, 16th October, 1950. These few lines are for the purpose of recording some of the resulting events, not to argue the merits or defects of the "direct action" taken.

In general, trams, buses, taxis, vans, trucks, private cars, etc., fill the roads. Swanston Street, between five and six p.m. is a hopeless mess. Road vehicles form an almost bumper to bumper wall from Franklin Street to Batman Ave., and only the presence of many police keep the cross streets clear when the lights give them the "green." The trams, although carrying very heavy loads, have managed, on the whole, to keep a fairly even spacing. Some disorganisation has been inevitable, and sterling work has been carried out by crews to restore the service to normal. At the Victoria Street, shunt, crossovers two and three have almost been forgotten. Number one shunting practically all cars, except those forced to use the crossover outside the Public Library.

Loading on Carnegie, Darling Road, and East Brighton cars has been particularly heavy. Many cars have arrived at the Victoria Street shunt with seated, and even standing to crush loads, ready to go back. Noticed "L" 104, looking very nice in a new coat of paint, and with new end cabins, new bolsters, and 28 in. diam. wheels, arrive, squeeze half a dozen more passengers on board, and go rolling off down to Carnegie.

Since the strike began, Melbourne has had three important race meetings. Namely, the Caulfield, Moonee Valley and Melbourne Cups, held at Caulfield, Moonee Valley and Flemington Racecourses respectively. These have provided three examples of concentrated mass loading. Transport available was tram, private bus, private car or taxis. Some handsome profits were certainly made. From Flemington to the City, three miles, taxis had the amount of 4/- chalked on their windscreens. Apparently per each. Train fare, on the Specials, 7d. One private bus had "Burnley 3/-" chalked up. Tram fare 9d. At Caulfield, the same bus had "Burnely 2/-." Tram fare 11d. At least we must commend the owner's honesty — his bus was the

PERTH TROLLEY BUS

No. 41, first of fifty new trolley buses for the West Australian Government Tramways, Perth. Nos. 41-50 will have bodies by the Commonwealth Engineering Co. Ltd., Sydney, N.S.W. The remainder will have bodies constructed locally; Nos. 51-52 being already in service — (Courtesy, "Truck & Bus Transportation").

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only one sighted displaying the fare. M[illegible] of the trams carried auxiliary [illegible]s stating the minimum fare, [illegible]d fare to the City.

Some tram drivers allowed footboard riding, but most adopted the very sensible "get in or get off" attitude. Bystanders were heard to remark very favourably on this. Most buses allowed footboard riding; some with men more out than inside the vehicle. Others had men on the front mudguard, and two even had men riding on the rear bumper bar, and clinging to the emergency door catches and roof guttering! Mention must be made of the very efficient manner in which the police handled the extremely heavy traffic. They gave a perfect display of how to handle concentrated masses of road vehicles, with the minimum of congestion. Only two traffic jams were noted, and these only lasted a few minutes each.

Many and varied are the vehicles giving emergency transport to "railway" suburbs. Noticed one ex-M. & M.T.B. "munition" bus on the [illegible]rabbin run. Also several other [illegible]nibuses whose much vaunted "[illegible]obility" apparently had not been sufficient to keep them out of varying degrees of violent contact with other "mobile" vehicles. Most required extensive panel beating, at least. One bus, sighted on two successive days, was still running with two shattered windows, the razor sharp splinters of which were merely hanging in the window frame!

Race Traffic Analysed:

"Observation Posts" were set up at the three race meetings mentioned previously, with the object of recording the movement of cars both to and from the loading area. Cars have been given home depot allocations only, except where otherwise noted. This naturally does not take into account cars either on loan or permanently transferred to another depot. In one or two cases, it would appear that the foregoing provision applies.

Caulfield: Saturday, 21/10/50. Time of observation, from 4.47 p.m. to 6.35 p.m. Approaching the loading area from the city, a right-angle turn is made to the left under the railway bridge, where a double track turnout is immediately encountered. The diverging pairs of tracks come together about 100 yards further on, after completion of a double track balloon loop. At this point, there is a double track "Y" junction, the eastern most arm of which continues for about 70 chains along Waverley Road to the Darling Road terminus. After leaving the railway bridge, the northern arm enters Dandenong Road, and meets the southern arm at Derby Street, after the latter has traversed Railway Avenue and into Derby Street, thus completing the loop.

Cars were supplied as follows:—Malvern Depot 24 cars, 4 of which made second trips; Glenhuntly, 28 cars, 8 second trips; Hanna Street, 5 cars; Kew, 6 cars (including "SW5" 846 on loan from Hawthorn). Preston, 1 car; Essendon, 1 car. Total of 65 cars, with 12 second trips, making 77 trips observed.

"Up" cars ran on the following routes:—St. Kilda Beach (approximately half the cars worked via Balaclava Road, the remainder using Dandenong Road), 30 cars, 4 second trips, total 34; Elsternwick, 18 cars, 4 second trips, total 22; Point Ormond, 7 cars, 4 second trips, total 11; Malvern Town Hall, 4 cars; Kew, Cotham Road, 2 cars; Kew, 1 car; Kew Depot, 3 cars.

"Down" cars:—Most cars terminated at the loop, but 25 cars and 3 second trips, total of 28 trips, worked through to the Darling Road terminus, including normal service cars.

Before the traffic began to roll, 16 cars were stored on the "up" track of the southern arm of the loop, necessitating "up" service cars using the "up" track of the northern arm of the loop. Normally, service cars use the southern arm only, as it passes within a few yards of the entrance to Caulfield Railway Station. After the last race, in the 30 minutes from 5.15 p.m. to 5.45 p.m., 44 "up" cars left the area; an average of one car every 41 seconds. All "up" cars, needless to say, were full to packed with passengers during the period observed. Both "down" and "up" cars worked in either direction round the loop.

Moonee Valley: Saturday, 28/10/50. Time of observation, from 4.43 p.m. to 6.00 p.m. Approaching from the city, a trailing crossover is encountered just over Puckle Street, with a second trailing crossover about 40 chains further north at Thomas Street. The "up" track between these two points is used to store specials, while two-way working is controlled on the "down" line by manually operated two aspect signal lights. About 70 chains further on there is a single line in Napier Street, outside the Essendon Football ground, capable of taking 13 cars, with a single turnout that is

5.4.4

HIGH VOLTAGE

Electric Railway News and Notes

By Our Electric Railway Editor

40 ELECTRIC LOCOS For NSWR West Line

BIG N.S.W.R. ORDER

An order has been placed with the Metropolitan-Vickers Electrical Co. for 40 dual-purpose electric locomotives for the New South Wales Railways.

The order, placed through the Australian General Electric Co. Ltd., is to provide the motive power for the Sydney-Lithgow 1500-volt D.C. electrification. The design appears to be unchanged from that illustrated in "Railways in Australia" for December, 1948. Total weight is 108 tons, and the locomotives will have an hourly rating of 3780 h.p.

ASHBURTON DUPLICATION

The Victorian Railways have called tenders for earthworks in connection with the duplication of the Alamein line between Camberwell and Ashburton in the Melbourne electrified area.

GIPPSLAND ELECTRIFICATION

Progress on Victorian Railways.

It is hoped that the work of erecting the overhead wiring for the Gippsland line electrification will commence before the end of 1951. Fri 4.30 2 proofs—4366—Caul Pr.—The substation at East Dandenong is nearing completion and the tie station at Hallam is under construction. All necessary orders for materials have been placed and delivery of most components is expected by 1951. The equipment ordered includes twenty 1500 KW. mercury-arc rectifiers of the latest design, 147 high speed circuit breakers, 840 tons of copper wire, and 3,365 tons of steel sections for overhead masts.

The 17 electric locomotives are scheduled for delivery by June, 1952, to be available for testing and staff instruction before the anticipated opening of the electrification in December, 1952.

Plans for the complete duplication of the line between Dandenong and Traralgon are now in preparation for the approval of the Parliamentary Public Works Committee. It is estimated that by 1956 the combined output of Yallourn and Morwell briquette factories will be such as to require these track facilities and others such as the proposed Morwell marshalling yards.

NEW SOUTH WALES ELECTRIFICATION

New Tourist Cars Mooted.

It is understood, from a reliable source, that the N.S.W.R. have dropped the idea of using the existing suburban stock over the projected Northern line electrification. Chief reasons are the prohibitive cost and physical difficulties of widening the Woy Woy tunnels to permit the passage of this wide (10 ft. 6 in.) rolling stock.

Instead, "tourist" type multiple-unit trains are under consideration. Cars would have toilet facilities and will most likely comprise first-class trailers, with second-class motor coaches. Interior equipment generally would be of a higher standard than provided for suburban journeys.

New Cars for Sydney.

New electric trailer cars Nos. 4567-4574 entered service on the Sydney suburban lines during July and August of this year.

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trailing to "up" cars. Entrance is gained by a double shunting operation, using a trailing crossover a few yards before Napier Street. Another trailing crossover is situated half-way between Thomas and Napier Streets, just before Fletcher Street.

Another group of specials was stored in Fletcher Street, between Napier Street and Pascoe Cres. Two-way working on the "down" line being controlled by Inspectors using track telephones. It was indeed an impressive sight to look from Puckle Street towards Fletcher Street, and see an almost unbroken line of cars waiting to move the crowd, just prior to the exodus from the course.

Cars were supplied as follows:—Essendon Depot, 53; Brunswick, 1; Malvern, 1; Hawthorn, 1 (car was "SW2" 436); Kew, 2; Preston, 4, plus one second trip, giving 5 trips; Coburg, 13; Hanna Street, 6. (Of the 13 cars in Napier Street, 7 were Essendon, 4 Coburg, 1 Kew, and 1 Preston.) A total of 81 cars and one second trip were observed, making 82 in all.

"Up" cars ran on the following

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AUSTRALIA'S LARGEST MODEL SHOP

Model Railways from ⅝ to 15 inch Gauge

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Steam Donkey Engines,
Models for above to drive.

Brickplayer, Bayko, Buzz Builder and Meccano Sets,
Kits for building Locos, Cars, Aircraft and Ships.
Model Artillery, Searchlights, Farm Machines, etc.
Lead Soldiers, People, Zoo and Farm Animals, etc., by 4 famous makers, boxed sets or for separate sale.
English Pedal Cars, Tricycles and small Bicycles
Toy Trains, Rails, Points, Signals, Tunnels, etc.
Dolls, Sewing Machines, Stoves, Tea Sets, etc.

"See us first and bank the difference" is our motto.

MEADMORE MODELS

163 EXHIBITION ST.,
MELBOURNE, C.1

'Phone JM 1678

routes:—City (Elizabeth Street), 64 cars, one second trip, total 65 trips; City, via William Street, 2 cars; Depot, 15 cars. These latter cars were not required to run the full distance to the City, as the bulk of the load had been moved on previous cars. A total of 67 trips were made to the City.

"Down" cars, excluding specials: Essendon, 3 cars; Essendon, Bulla Road, 8 cars; Essendon Aerodrome, 3 cars; total of 14 cars. All cars, except one, from Essendon Depot. It is possible, therefore, that this car from Brunswick was on loan to Essendon.

During the 33 minute period from 5.12 p.m. to 5.45 p.m., 49 "up" cars left for the city, at an average of one car every 40 seconds. During the whole period observed, six cars worked "bang road" "up" the "down" line between Puckle and Thomas Streets.

(To be continued)

LATE NEWS

¾-mile extension of Holland Park line (Brisbane City Council tramways) opened 11/11/50. Present terminus is Nursery Road; work proceeding on remainder of extension to Mt. Gravatt.

Brisbane City Council trams and buses strikebound early November.

PERTH—W.A.:—

The Victoria Park tramway, which was to be bustituted in August, may not be stopped till December, 1950. It is expected that the Maylands and Mount Hawthorn routes and the Charles St. and Mt. Lawley branches will go to bus or trolleybus in 1951. No details are yet available.

ADELAIDE—.S.A.:—

As soon as labor and materials are available, the M.T.T. will construct a short city link along Angas Street, from the Depot to Hanson Street. This will relieve congestion in Angas Street. Centre poles will be replaced by side span poles in the city streets—Grenfell, Hanson and Pulteney.

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18 different rolls available (mostly N.S.W.)., 3/6 to 25/- each, according to length.

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Complete set of wood parts for passenger car body 6/6
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Send for our comprehensive price list especially compiled for the scale modeller.

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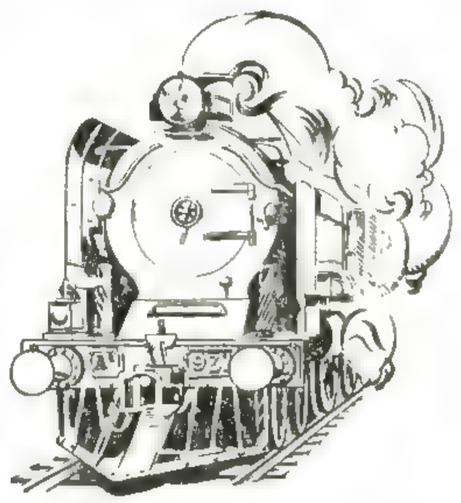

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A.E.T.A. NOTES

MELBOURNE BRANCH
November General Meeting.

In spite of the railway strike, a good attendance was present at this meeting, which had several highlights. Copies of two "missing links" in the photographic record of Australian tramcars were produced. They were the Coburg Horse tram, and the Hobart double-deck double-truck car. The former was supplied by a resident of Coburg, Mr. W. Mitchell, and the latter by the Hobart "Mercury" newspaper, from a magazine of the early 1900's. Considerable effort was required to locate these two photos, and the thanks of the Association go out to those who helped in the quest, including Siemens Ltd., for their thorough, although, unfortunately, unsuccessful efforts, to trace the car. However, they supplied the final "clue" which lead to the discovery of the magazine print. The Association has had a negative of the Coburg car made (size 120), and prints are available at one shilling (1/-) each. It is planned to treat the Hobart car in a similar manner.

A new member, Mr. B. Johnson, was admitted to the Association.

The address for the evening was given by Mr. P. W. Duckett, on his recent visit to Sydney. In the comparatively short time at his disposal, Mr. Duckett covered highlights from many parts of the system, including some abandoned sections. In his inimitable manner, Mr. Duckett kept the meeting fascinated with elucid descriptions and humorous comments on various items.

SYDNEY BRANCH
October Meeting.

The 22 members and two visitors who were present at the October meeting were privileged to her Mr. F. A. Andrews, A.E.T.A. representative in Brisbane, who is at present in Sydney, deliver an address on the tramways of Leeds Mr. Andrews was a resident of Leeds for many years and knows the system very well. He traced the history of the undertaking from the early horse cars, through the steam era, to the present day. Mention was made of the trolleybuses which were among the first in the world. They were introduced in 1911, but were not altogether successful, and Leeds abandoned all trolleybuses many years ago.

Mr. Andrews pointed out that, although Leeds had opened several routes of the light railway type in recent years, some routes which traversed narrow streets, often only wide enough to accommodate single track, had been abandoned in recent years, and that it was possible a few more would go. On the whole, the Leeds City Transport Department was gradually building up an excellent system with several routes that could easily be converted to Rapid Transit lines when the occasion demanded.

Two large maps and a large number of postcard-size photographs, showing all types of cars and many general views, both historical and recent, helped to make the talk a success. At the conclusion of the meeting, Mr. Andrews was accorded a hearty vote of thanks.

At the meeting it was decided to elect Mr. K. D. Morris to the position of assistant secretary. Mr. Morris will probably be taking over the writing-up of the minutes as from next meeting. Mr. Lane will continue to handle all correspondence relating to the Sydney Branch of the A.E.T.A.

Members, visitors, and others, who will be in Sydney for the December meeting which will be held on the 15th December, are notified that Mr. K. McCarthy will be showing a number of films on tramway operation in Sydney and Newcastle. A number of these films are unique, as they depict last day operations on a number of lines that have been closed in recent years. Mr. B. Parle will be showing, by means of a projector, a number of Koda-Colour "stills" taken on the Newcastle system shortly before abandonment.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone: LF 1665)

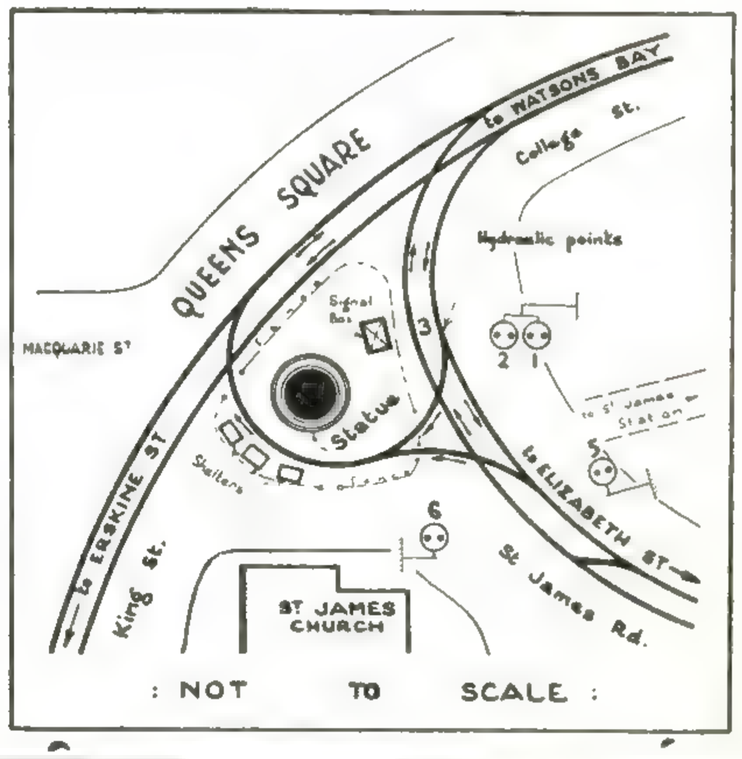
If outside Victoria, communicate with the nearest representative:

ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND: Mr. G. C. Stewart, 74 Fowlds Ave., Sandringham, W.2
BALLARAT: Mr. W. Jack, 31 York St., Ballarat East, Vic.
BRISBANE: Mr. F. A. Andrews, 35 Stephens St., Morningside, Q'ld.
CHRISTCHURCH: Mr. R. D. Grant, Nth. Canterbury Catchment Board, Christchurch, N.Z.
LAUNCESTON: Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON: Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.



NEW SYDNEY TERMINAL
(See news item this issue)

OVERSEAS ITEMS

STANDARD LOCOS. FOR BRITISH RAILWAYS

TWELVE NEW DESIGNS

One of the most practical results of railway nationalisation in Great Britain has been the development of standard designs for freight and passenger rolling stock. This has now been followed by the introduction of standard locomotive designs, twelve of which will cater for all requirements throughout the system. Several hundred different types are in service at present, despite the standardisation schemes of the four big companies prior to nationalisation.

First W.R. Pacifics.

Six of the new designs will be introduced during 19[illegible] the others being delayed by a restriction on capital ex[illegible]iture imposed recently. An interesting feature [illegible]he allocation of the new locos is that Pacific-type engines will be in regular service on Western Region rails for the first time.

Allocations.

A total of 169 engines will be built, allocated as follows:—

4-6-2 Medium weight (25) — Eastern Region 15, Western Region 10.
4-6-2 Light (10) — All Scottish Region.
4-6-0 Medium, mixed traffic (30) — Sc.R. 5, London Midland Region 25.
4-6-0 Light, to replace 4-4-0's (20) — W.R. 10, L.M.R. 10.
2-6-4T passenger (54) — Sc.R. 21, Southern Region 10, North-Eastern Region 3, L.M.R. 20.
2-6-2T freight and shunting (20) — S.R. 10, W.R. 10.

Non-standard Types.

British Railways will continue to build, for some time, non-standard locos, large numbers of which are on order.

HUGE EXPENSE FOR U.S. RAILROADS

Signalling Improvements Ordered.

Millions of dollars—four million will be spent by one railroad alone—will be required to equip American railroads with signalling and safe-working facilities in accordance with an order issued recently by the Interstate Commerce Commission, which is responsible for such matters in the United States. Railroads unable to comply with the order are required to reduce speeds, in some cases drastically. Where unreasonable hardship or operating difficulties can be proved, temporary exemptions will be granted, but in general the order has proved a blow to the plans of the railroads. Some have had to cancel orders for new diesels and other equipment to find cash to pay for the signalling.

NEW CANADIAN LINE

Work is being pushed ahead, including a million-dollar bridge, to connect the hitherto isolated Pacific Great Eastern line with the Canadian National at Prince George, British Columbia. Previously the only connection was by car ferry, 40 miles from Vancouver to the P.G.E. terminus at Squamish. This road will become part of the projected Alaska Railroad if the latter is built, as currently seems likely. If this is done, a connection at the Vancouver end will be constructed.

SWEDES SHOW HOW

Almost unique among major railway systems is that of the Swedish State Railways, whose financial position is particularly healthy. Profit for 1949, after allowing for depreciation, was 44 million kroner.

..Views expressed herein by contributors are not necessarily those held by the editor or publishers.

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Bogies are listed in sets of four sideframes and two truck bolsters. Wheels are listed separately, so you may choose the type you prefer.

When you buy bogies "Ready to Roll," you are paying for someone to do the assembly. Assemble your own and save money. This way you can obtain superdetail bogies at a reasonable price.

AVAILABLE NOW.

Axleguard — V.R. "GZ" Type, 4 per set, (O) 2/6 set, (HO) 2/6 set; Archbar Truck Set, (O) 6/- set, (HO) ?? set; Four-wheel Passenger Truck Set — "NYC" Type (O) 7/6 set, (HO) 5/- set; Body Bolster, to mount trucks to car floor and set the car at correct height, (O) 8d. ea., (HO) 6d. ea.; Coil Spring for truck springing (1 spring equips one set of trucks), 3d. ea.; Data Sheet No. 2 — Details of how to spring trucks by the B.P.R. method, 1/3 ea.; Plastic Wheels — Disc Type, O Gauge ¾ in. and HO 10.5 mm. diameters, (O) 1/4 pr., (HO) 10d. pr.; Super Precision Brass Wheels (3 Rail) O Gauge, O Gauge, 11/16 in. and ¾ in., HO, 10.5 mm. diameters, (O) 2/3 pr., (HO) 2/- pr.

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Bettendorf Truck — O and HO.
Archbar Truck — HO.
Plastic Spoked Wheel — O Gauge, ¾ in. diameter.

B.P.R. parts are available at leading hobby shops in Melbourne, Sydney, Brisbane, Adelaide, Perth.

MODEL RAILWAYS in Australia

ELECTRIC — STEAM — CLOCKWORK
ALL GAUGES
Contributions Invited

A THEME FOR YOUR MODEL RAILROAD

By K. N. Lowry

I am an advocate of Free-lance Modelling. This does not mean that I am intolerant of those who prefer to follow a specific prototype. The whole approach to our hobby—Scale, Gauge, Power, Choice of Prototype, etc.—is a matter for individual selection, and not a subject for criticism by others.

However, I do contend that even if one builds exact or reasonable replicas of cars and locos used by the V.R., N.S.W.G.R., S.A.R. or any other full-size railway, limitations of space make it quite another matter to model, even within reason, the trackwork, lineside scenery, and general operating conditions of real practice. Therefore, the follower of strict prototype in cars and locos has to free-lance when it comes to providing a setting for the equipment he builds.

The term "Free-lance" has been greatly abused. Persons who lack the ability or initiative to build reasonable railroad models, have used the term as an excuse to justify their nightmares on wheels. My interpretation is somewhat different. Apart from structural subterfuges necessary for making models, they should follow scale dimensions and have the **external appearance** of real railroad equipment. In other words, free-lance and prototype modelling are the same, except that the free-lancer is not tied down to modelling the equipment of one full-size railroad, but has the world to choose from, and, consistent with standard railroad practice, may combine features from several types to make his model.

When real railroads instal a car, loco, or other equipment, it is for a specific purpose, to provide a service under conditions existing on that railroad — and not merely because some other railroad has one. Therefore, I believe that model railroads should follow the same procedure. Don't model Refrigerator Cars or Sheep Trucks just because the V.R. has a lot of them, but because your Backyard Central has a swag of melons and mutton to move from Mulga Junction to Slum City.

Before construction commences, the first thing to decide is what you like best — Branch or Main-line, Shunting, Freight or Passenger service, Scenic Effects. Having made your choice, survey the space available—and you will find a good portion of the things you want will have to be whittled down or eliminated. Eventually, you will strike a compromise between your desires and space limitations.

Following the free-lance theme, let us say that we have decided our preferences are a small but prosperous private-owned branch line, shunting operations, mainly freight but with a little passenger service, American type locos, assorted Australian and American rolling stock, and rural and mountain scenery. A system of this type will fit into the space available to the average modeller. Short trains and sharp curves are justified, structures will be small and low, giving a greater illusion of space and distance than the large buildings, stations, coal stages, that would be necessary if main-line practice were followed. The mention of Yank equipment may cause some controversy, but I would point out that firstly the above is purely a hypothetical selection, secondly our Australian Railways have a fair sprinkling of equipment of American type or American influence. So, if you should like some Yank prototypes, as I do, there is nothing odd about adapting them to Australian conditions.

Since model railroads, perhaps even more than prototype, are governed arbitrarily by minimum curvature, length of sidings, and gradients, it is advisable to make a scale drawing of your space, and a master plan of the eventual system. From there we drift off to flights of fancy. No longer is our space a room or shed. It is a Railroad Empire, a territory to be conquered with twin ribbons of steel, and we are the controllers of this vast enterprise. There are towns and districts to be linked, produce and resources to be exploited. So we form a company to handle this project, make a survey of the terrain, natural resources and future industries, and what equipment we will require.

Backyardia is an expanding Australian district, rich in natural resources, and requiring a railway service to open up the country, and the Backyard Central Railway Company has been formed to fulfil this purpose. The Company has contracted to build an independent Branch between the two main towns of the district — Mulga Junction, on the main line of the State Railways, centre for the fertile farming and grazing area located in Parasite Valley; and Hillcrest, in the Footscray Alps, an area rich in timber, cattle, and dairy produce, and a potential tourist resort. Spurs to the Coal Mine and Timber Mills are to be installed, and the line will give the district acess to the State Railway.

As construction is to be undertaken by the Company, and not by contractors, work engines and rolling stock will be selected with a view to future use, either as yard or road equipment. The high grade coal available from the mine in the Alps makes the use of coal-fired steam locos economical. The terrain and local conditions indicate that locos of American type will be most suitable. Most of the haulage will be freight, in short, trains maintaining a fast schedule, therefore relatively small engines with medium drivers —about 5 ft. 6 in.—of 2-6-0 and 2-6-2 wheel arrangement, have been

(Continued on page 21)

Letters from the Chair

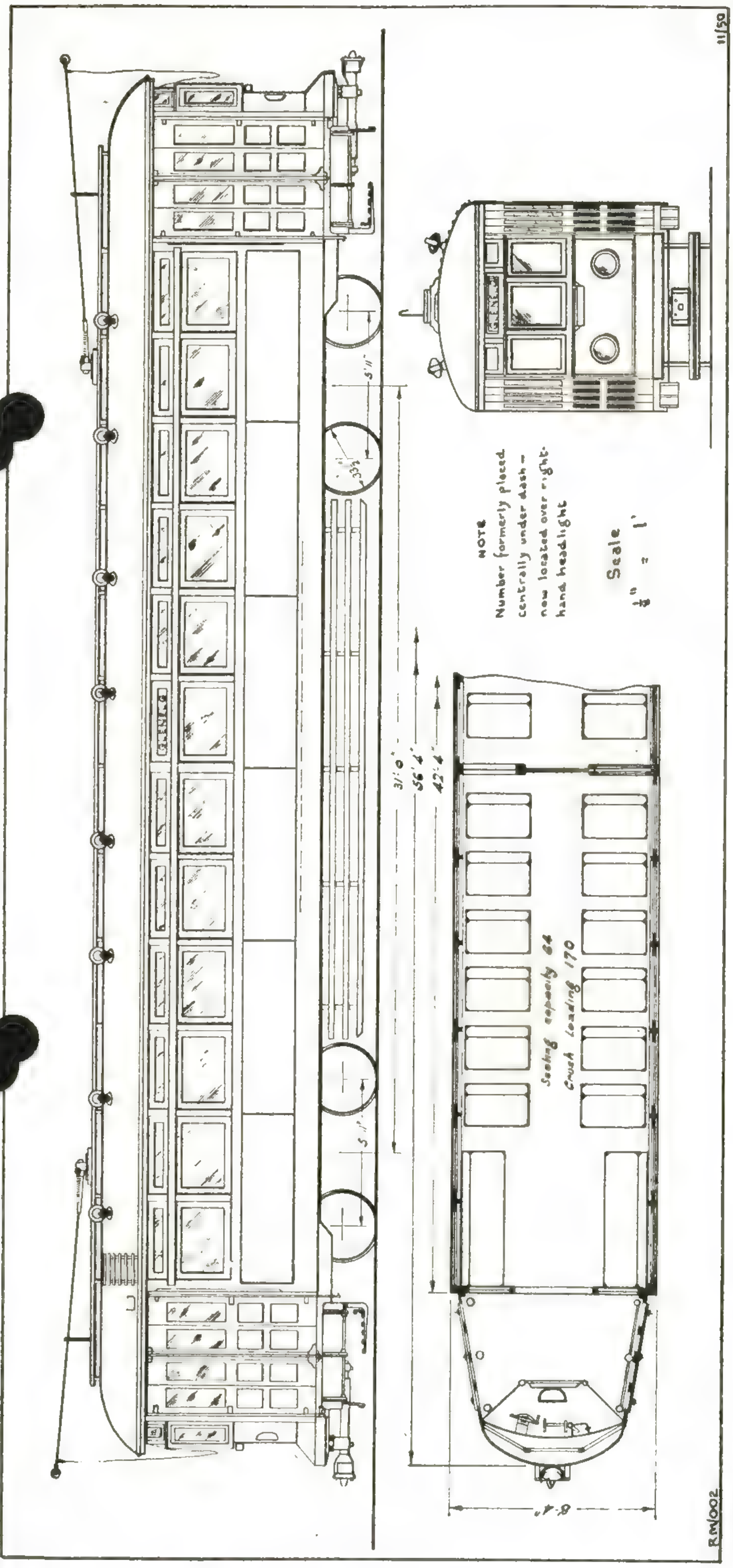
Greetings, Brother Railfans!

You will have noticed references to our contemporary "Rail et Traction" from time to time. Like "Railways in Australia," this Belgian journal covers models as well as full-size railways and tramways. The Association of Belgian Railfans, for whom the magazine is published, observes that this interest in models is justified by their propaganda value alone. The general public, comments the editor, is always attracted by a miniature train, and properly constructed models operated according to railway practice can be used to illustrate many aspects of railroading which even the regular passenger does not see in his daily travels. More important, they stimulate interest in railways generally.

Apart from this, modelmakers themselves — often derided for "playing with toy trains" — acquire new skills and no little satisfaction of the creative urge from their efforts.

All in all, I feel that such criticism as has been voiced against the inclusion of a model section in "Railways in Australia" is without much logical basis. Perhaps a valid objection is that there is not enough space to cover the subject fully, but that will come. You chaps can help by letting the editor have articles about your own system, the locos and cars you build, the little wrinkles you have worked out.

Yours for better model railroading,
THE ARMCHAIR MAN.


NOTE
Number formerly placed centrally under dash — now located over right-hand headlight
Scale 1" = 1'
Seating capacity 64
Couch Loading 170
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AUSTRALIAN ROLLING STOCK
No. 2 — H-Class Interurban Car, Municipal Tramways Trust, Adelaide, S.A.
(Picture next month).

NEW MODEL CENTRE
Opened Near Melbourne.

Captain James' Model Centre, at Beaumaris, Vic. (see last issue), was officially opened and blessed by the President of the Australian Association of Model Societies, Rev. L. L. Elliott, at 3 p.m on Saturday, 18th November. Those present included the Secretary, Mr. E. Dean, and delegates, with their wives and friends, the following bodies being represented: Victorian Model Railway Society, Melbourne Society of Model and Experimental Engineers, Wireless Institute of Australia, Ship Modelling Society of Victoria, Model Power Boat Society, Victorian Aeronautical Association, Hale's Creek Railroad Club, Surrey Hills Live Steamers, Victorian Model Race Car Club.

A dinner was given by the A.A.M.S. at the Mordialloc Hotel, a social evening being enjoyed afterwards at the Model Centre, and a most enjoyable time was had by all present. Captain James is to be thanked for his kind hospitality.

LIVE STEAM ACTIVITIES

The gathering reported above found the Armchair Man well-entrenched behind a formidable piece of strawberry cream cake, but not so well as to keep him from braving the intermittent rain with the live steam enthusiasts. The latter pottered about happily —it is doubtful if they ever realised that it was raining!

Star performer was the 12 in. gauge model of the old A Class 4-4-0 of the Victorian Railways. All of her prototypes have long since departed, but this sturdy machine hauled loads of children and their parents throughout the afternoon. Some particulars of this machine are given hereunder.

Dimensions generally are one-fifth full size, and the engine has a Babcock boiler—believed to be unique in this country; working pressure is at 100 lb. Cylinders are 2¼ in. x 3½ in. Both coal and wood are used for fuel. The engine weighs approximately 6½ cwt. in steam.

½ in. Scale Loco.

On the 2½ in. gauge tracks was a freelance 4-6-4 by Mr. Finlay, of Beaumaris. The boiler of this interesting loco. is based on a Pennsylvania RR design, but, with only one dome, resembles the LMS "Duchess" type. The streamlined cab is enclosed in the Canadian manner, and a large 12-wheeled tender completes the picture of an imposing machine in bright red livery. Nor was there any lack of power, for two adults were hauled with no apparent effort. Scale cars of the "crocodile" type were used for this work and involved passengers in some feats of precarious balance.

Visitors.

Operation will continue throughout the summer, and intending visitors should get in touch with Captain James at the Model Dockyard.

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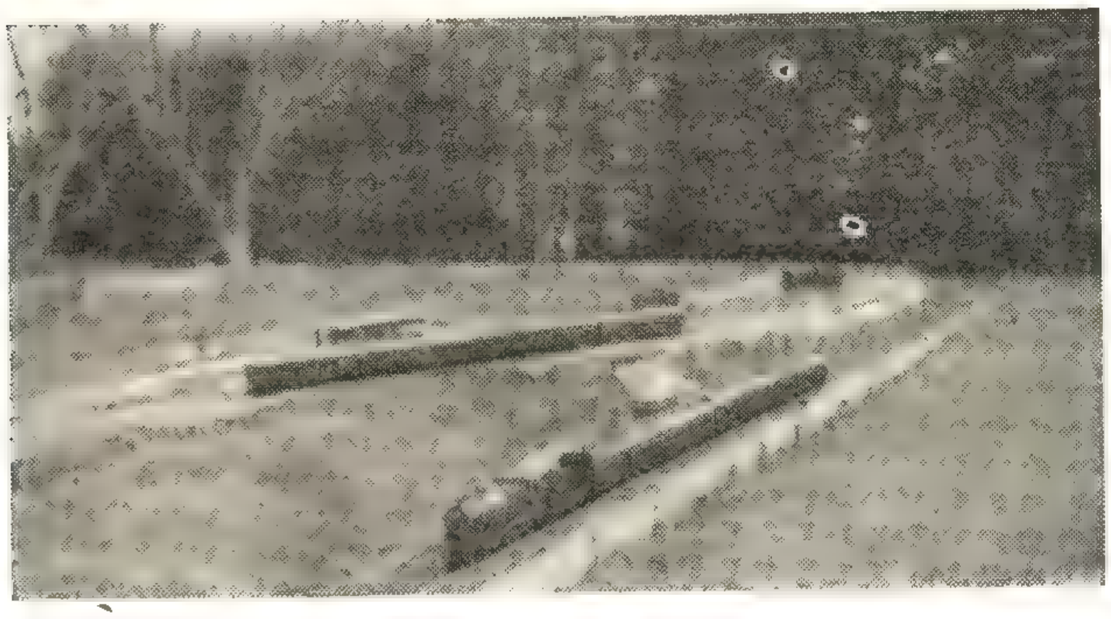
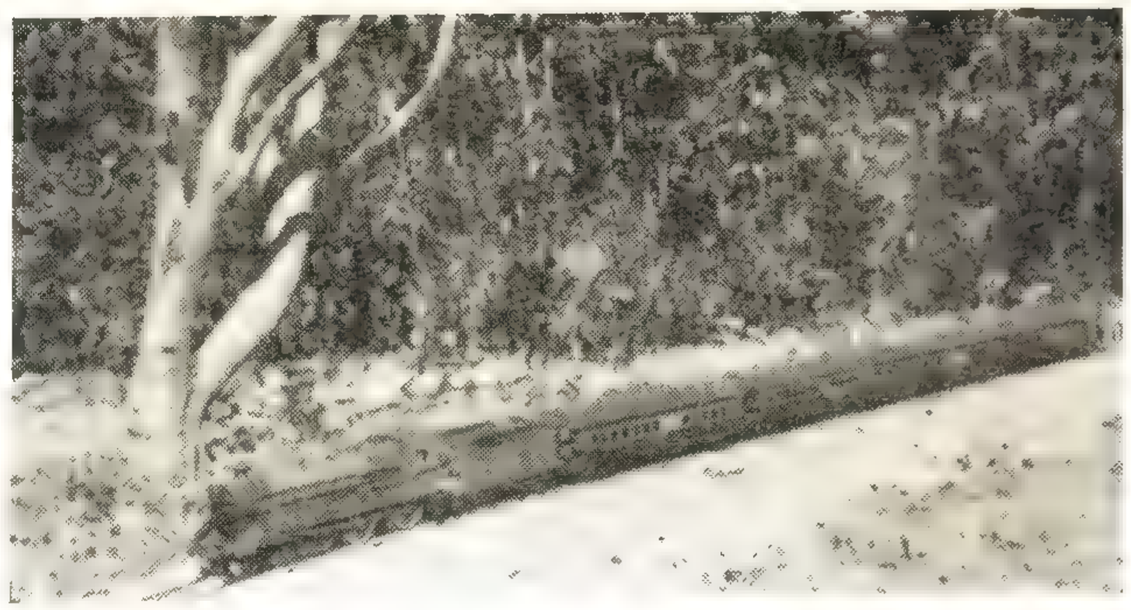




SCENES ON THE MAYFIELD LINES.—Mr. Clark's photographs show (left) a general view of the southern part of the system: an Up train is about to leave Dalmar, headed by a 34 class loco, while an electric stands in the Up Main platform at Cammeray (for photographic purposes!); Cammeray Loco is visible in the background. The right-hand illustration shows a 35 class locomotive and LUB set near Norwood. The faithful reproduction of N.S.W.R. practice will be observed.

THE MAYFIELD LINES
By L. A. Clark.
(Continued)

LOCO. DEPOTS.

These are located at Cammeray, Griffith, Athol and Wallsend and all possess a turntable. As mentioned previously, the main depot is placed between the suburban and main lines. Entrance to loco., for engines coming from Mayfield off trains, to be turned, is via the down main, then by reversing through points which are trailing to main line trains. The outward road leads on to the up suburban line, and engines may, by using the various crossovers, back on to a set of cars in any platform.

TRACK.

Maintenance of track is—or should be—a fairly constant job, as there is always plenty of fettling to be done, especially in the growing season, when the weeds make a determined effort to obliterate the railway altogether. The sleepers, being of small section, and in actual contact with the earth, tend to rot after a few years, particularly those laid in low positions, where the water is likely to lie. A far more troublesome type of repair, however, is the replacement of sleepers and battens of points, of which there are 63 on the layout.

POINTS.

Most points are mechanically operated from lever frames situated beside the line. There are four such frames at Mayfield, with 10, 6, 2, and 1 levers respectively, which control all points and crossovers on the main line and sidings as far as Cammeray. It has been the practice of the N.S.W.R. for many years to eliminate, wherever possible, the diamond and slip crossing. This policy has been followed on the Mayfield. Reference to the plan will show that there is only one diamond crossing on the whole layout, and no slips.

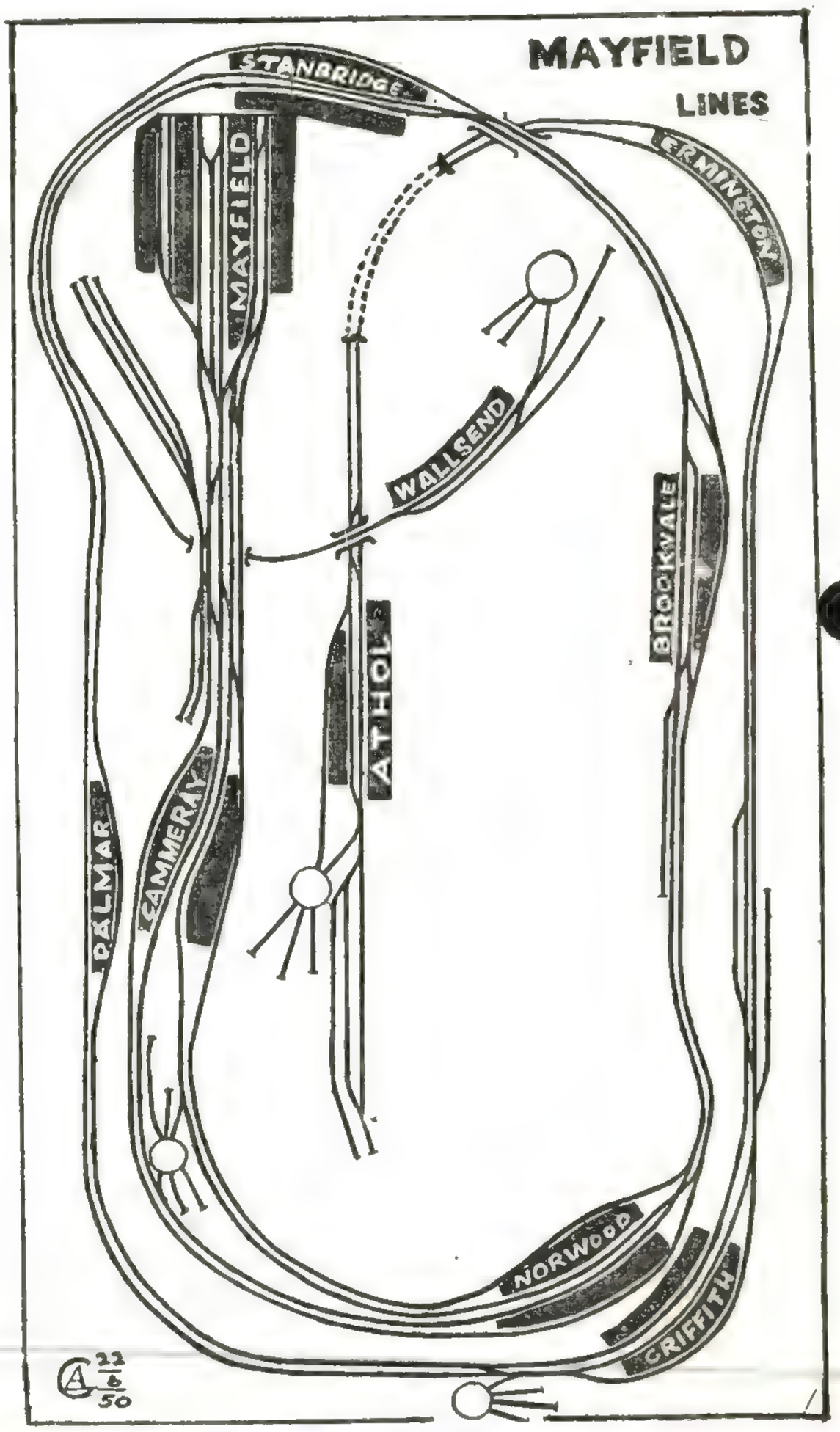
SIGNALS.

As the track is on ground level and completely surrounds a vegetable garden to which a hose has to be dragged across the rails (this happens in normal seasons, of course!), there are no signals. Trains are operated on the visual block system, which works well enough provided certain elementary rules are observed, except on one section, where an embankment blocks the view.

ENGINES.

Locos, as mentioned earlier, are built to resemble N.S.W.R. prototypes. Unfortunately, they cannot be classed as scale models as the mechs. used are too high and too long for scale purposes.

The principle followed, therefore, has been to take the works and build the particular type of body required around it, keeping all parts proportionately larger. The general effect is passable, and leaves no doubt as to the class of engine intended to be represented. All mechs. except four, are Hornby of various types and differing wheel diameters. Six-coupled and eight-coupled engines have an extra pair or two pairs



selected. These types appear to fulfil the requirements for moving 10 or 12 car freights and 3 or 4 car passenger, which will comprise the bulk of traffic, over the sharp curves and undulating countryside traversed by the road. At a later date, engines of the same basic design, but with varying degrees of power and wheel arrangement, may be acquired to handle heavier or specialised traffic.

In certain services, bogie freight cars of American pattern will be used, but for general purposes 4 wheel cars will be quite adequate and will be built to local design.

Although a Branch line, this system is not the one-train-a-week variety. Freight traffic in this productive province will be a profitable source of revenue, and warrants the installation of equipment of much better condition than usually is found on branch lines. The inroads of Road Transport have necessitated the use of specialised and efficient equipment, comfortable coaches of reasonably modern vintage, fast schedules, attractive fares and tariffs. This Company is out to show the public that properly-handled rail traffic is more than a match for highway transport.

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MAYFIELD LINES

(Continued)

of wheels added, as the case may be. Three of the "32" class are No. 2 Specials with No. 1 Special wheels. The "34" is an original No. 2 Special (with the extra pair of wheels added, of course), while the 10, 11, 2/13, 17 and one 32 are old No. 2 mechs. The "53" is also a No. 2 Special fitted with scale wheels by the G.N.R., Melbourne. Two powerful mechs. of unknown origin are fitted to the "30" class, and Leeds and Bassett Lowke are represented in the "35" and "36" class, respectively. The two "electric" motor cars have No. 2 Specials fitted with small wheels and no side rods, and the rail motor is a No. 1 mech. in original state except for the removal of connecting rods.

ROLLING STOCK.

The primary consideration in constructing the rolling stock, apart from the desire to achieve a reasonable likeness to the real thing, has been to keep the weight of each vehicle as low as possible. This has been attained by the use of tinplate for bodies, roofs and floors and making the bogies as light as possible by the use of lightweight wheels.. For many years, "Fleet" bakelite spoked wheels were fitted to all vehicles and there is no doubt that these wheels are the nicest looking and most realistic ever to be put on the Australian market. However, for a rough outdoor layout, exposed to all the vagaries of the weather and subject to great variations of temperature, they are not ideal as the tread is narrow and the flange is shallow (although constructed to scale dimensions). As opportunity occurred, a change was made to an aluminimum alloy wheel of more generous proportions made by Steward's of "O Gauge House," Ashfield, N.S.W. These wheels are very light and increase the weight of a bogie vehicle by approximately only one ounce, and result in much more satisfactory running performance.

The N.S.W.R. has, for more than half a century, followed the policy of operating close-coupled sets on suburban trains, the practice being extended to some country trains about 1928. The idea applied to a model layout is very effective, as it enables vehicles to be coupled far more closely than would be possible with the average commercial coupling available in Australia, also enhancing realism and reducing weight, as buffers are omitted between cars. Buffers and Hornby old style couplings are fitted to the front end of the leading car and to the rear end of the last car in each set. Five such sets of steam hauled stock are operated,

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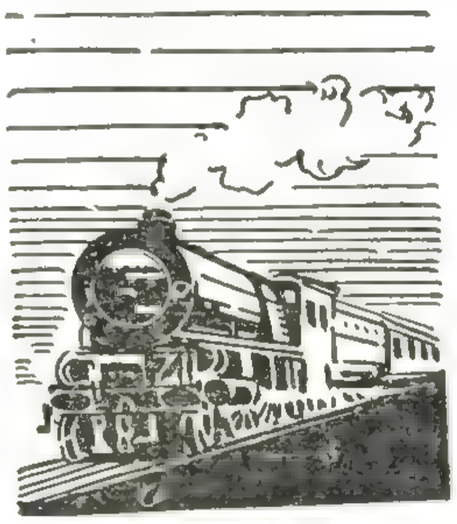

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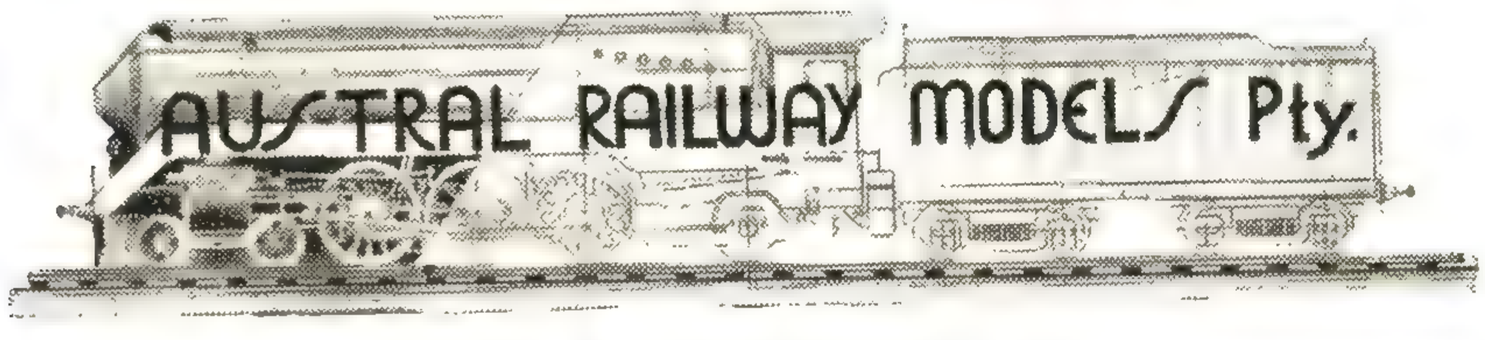
one of three cars, three of four cars, and one of six cars. There are seven loose-coupled or independent cars in stock, mainly of the larger types (FS, BS, CBC, VHO) with buffers and couplings at each end.

OPERATING.

Occasionally a field day is held, when all operations are carried out strictly to time table. Details of the methods employed will be described in a later article.

(To be continued)



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Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative,

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

Meetings last Saturday night in each month at 8 p.m. in Club House, at above address.

Interstate visitors given warm welcome.

Secretary: R. R. Steward, same address.

THE AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY meets regularly as follows:—

SYDNEY BRANCH: Railway Institute, Devonshire Street, Second Tuesday in each month. Secretary: H. H. Matthews, 27 Ross St., PARRAMATTA, N.S.W.

MELBOURNE BRANCH: Railway Institute, Flinders Street, Fourth Thursday in each month. Secretary: R. B. McMillan, 15 Mercer Rd., MALVERN, S.E.3.

QUEENSLAND SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings every month; contact the Secretary, Mr. C. H. Garner, Gray's Rd., GAYTHORNE. Model Railway Section with operating O gauge, and HO under construction, meets first and third Mondays; contact the Secretary, Mr. C. Harrison (B3508), or the Public Relations Officer, Mr. C. McTaggart, 101 Laura Street, TARRAGINDI.

TRADE TOPICS

In this section we shall refer from time to time to new items of interest to model railroaders as they come to our notice. Comment is based on the sample of each article seen by us, and we cannot entertain requests to review articles which we have not inspected.

N.S.W.R. Refrigerator Car (O gauge): This interesting kit is the first really practical Australian-made railway model in kit form. It is to the 7 mm. scale favoured in N.S.W., and comprises wooden roof, sides, floor, and ends, all accurately milled. Printed card sides with full detail are supplied to avoid difficult paint work, and all hardware, together with standard FLEET trucks, as well as a quantity of glue, complete the issue. (FLEET Scale Model Railway Equipment Co.)

Peco Way and Peco Individual (HO gauge): This is the most realistic track yet seen, and is available either in kit form (Track Pack) or as individual items. Although intended for scale operation, suitable point parts for Hornby Dublo or Trix trains can be obtained. The kits contain all necessary material and the method of assembly, although most unusual, is easy to follow. (Pritchard Patent Product Co.)

Scale Roof Sections and Car Body Woodwork (O gauge): It is undeniable that the difficulty of making correctly shaped roofs of realistic appearance has been one of the biggest problems in building both passenger and freight cars. These new wood sections are suitable for several types of car, including many V.R. and N.S.W.R., also American interurbans, and box cars, reefers, etc. Three roof sections—clerestory, arched, and box car—are available, as well as suitabe sections for car floor, sides and ends. All are to ¼ in. scale, and follow standards recommended by the N.M.R.A.. HO sections are promised. (Main Hobby Depot.)

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News items should be addressed as follows :

Railway News Editor,
Traction Publications,
29, Seymour Grove,
BRIGHTON BEACH, S.5

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

Mr. Hugh Ballantyne, Vermont, Victoria. asks for information on the Victorian Outer Circle Line.

ANSWER: The Outer Circle Line was opened from Oakleigh to Riversdale during 1890, and from Riversdale to Fairfield Park in 1891. It was built by the Victorian Railways originally with the idea of providing an alternative route for goods traffic between Gippsland and Melbourne. However, it never regularly served this purpose, and it is doubtful whether any through goods trains ever used this route. A passenger service was provided in the earlier days by the Rowan steam rail-car, later by tank engine and end-platform cars, and, by A.E.C. railmotor in the last year before the section between Camberwell and Ashburton was electrified in 1927. The whole line was closed in the 1890's —from Waverley Road to Fairfield Park in 1893, and from Oakleigh (Hughesdale) to Waverley Road in 1895. The section from Riversdale to Deepdene was re-opened in 1900, and passenger service on this section was maintained for many years. The service through East Camberwell to Deepdene, however, was withdrawn in 1927, though goods shunts still ran to East Kew untill 1941 or 1942. The southern portion is of course, still open, the electrified extension from Ashburton to Alamein being opened in June, 1948. It is not known whether any of the portions now closed and dismantled will ever be restored to service, but no plans to this effect have been announced. Crossing loops on the original line were at East Kew, Deepdene, Riversdale, Hartwell, Ashburton and Waverley Road.

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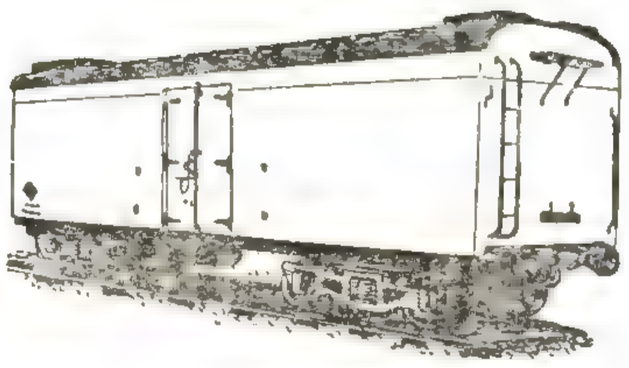

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Volume III, No. 12 — December, 1950

NEW HIGH-SPEED RAILCARS FROM U.S.A. For Com. Rails. East-West Line

As recorded in our last issue, the Commonwealth Railways have ordered from the Budd Co., of Philadelphia, U.S.A., three diesel railcars. The cars are known as the RDC1 (rail diesel car, model one), that is, all coach. It is expected that they will be supplied without seating, for it is intended to install airliner-type individually-reclining seats, giving the car a capacity of about 50 passengers. They will be used to give a one-day service between Port Pirie and Kalgoorlie, covering the 1,200 miles in 18 hours.

The RDC made its debut to the railway industry on 19th September, 1949, when the prototype car was put on exhibition at Chicago. Although there have been previous attempts to provide a suitable railmotor car, most have failed because the vehicle was too specialised in the type of traffic it could handle, or because its construction was substandard. These objections are overcome in the RDC, because it is of mainline proportions and fulfils all strength requirements of the Association of American Railroads. To ensure maximum payload, the twin engines are mounted below floor level amidships.

Motive Power.

Prime movers are 6-cylinder, in-line, horizontal engines by the Detroit Diesel Division of General Motors. When running at 1,200 r.p.m., these engines each develop 275 h.p., the governor limiting the rotational speed to 1,800 r.p.m. This design of motor was specially devised for railway service and, being

ONCE UPON A TIME . . . !

Eleven years ago there were Sunday excursion trains on the Victorian Railways. This shot by John Buckland shows a Down Ballarat excursion made up of APL and BPL cars, and headed by A2 class, 4-6-0, No. 943. The date — April, 1940. 1940

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WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia

(Contributions from readers are invited)

NEW LOCOMOTIVES, CARS, FOR W.A.G.R.

Commissioner's Review

In a New Year message to Western Australian railwaymen, the Commissioner, Mr. A. G. Hall, reviews, inter alia, the locomotives and rolling stock now on order for the Western Australian Government Railways. Some extracts are given hereunder.

Sixty W class engines are due in the first half of 1951—earlier reports mentioned only forty of these 4-8-2 light-line machines. 48 Diesel-electric main locomotives are on order, together with 18 for shunting and light passenger service; the diesels should be in service next year.

Passenger rolling stock being built totals 107 cars, which may include some new-type diesel railcars.

Freight cars on order include include 2,950 4-wheelers (known as "singles"), comprising 300 sheep, 300 cattle, 600 high-side open, 500 medium-side open, 250 low-side open, and 1,000 covered louvred cars. In addition, the following, classed as "special singles," are expected: 710 covered, with upper part louvred and hatch in roof for bulk handling of wheat, and 50 miscellaneous, including refrigerator cars. Bogie freight cars on order number 302, made up of 50 open high-side, 180 covered louvred, and 72 flat cars.

Other heavy expenditure will include £750,000 for the new yard at Collie, as well as an unspecified amount for rails being purchased overseas, to supplement the inadequate supply of Australian rails.

MOUNT MORGAN DEVIATION

Tracklaying Commenced

It is expected to have the Mount Morgan deviation (Queensland Railways, Callide Valley line) ready for traffic by June, 1951, writes a Brisbane correspondent.

Earthworks and drainage have been completed for 3 miles 30 chains, and tracklaying has commenced, rails being laid for over 1½ miles at the time of writing.

The deviation will eliminate the rack section (operated by Abt locomotives) between Moonmera and Moongan.

SOUTH AUSTRALIAN NEWS

The existing 85 ft. turntable at Mile End has been replaced by a heavier one of the same size. The original table was installed in 1925, and is now going to Naracoorte, in connection with the conversion of the Mount Gambier line to broad gauge.

Modernised Cars

Several of the old side-loading compartment coaches have been converted to end-loading centre-aisle cars. They have been completely modernised, with new interior appointments, and the provision of concertina gangways for main-line use. End vestibules contain lavatories, and doors give access to the central saloon. Seating is arranged to give two seats on either side of the aisle, with semi-bulkheads behind each pair of facing seats. Extra amenities include iced drinking water, paper cup dispensers, new-type baggage racks, and improved lighting.

Five cars have been converted to date, and have been renumbered to form the "900" class. The remaining cars are to be dealt with at the rate of approximately one per month.

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underfloor-mounted, does not encroach on revenue space.

A novel form of drive is used, each motor driving the inner axle of one truck, with the motors set in opposite directions. The motor is coupled to an hydraulic torque converter made by the Allison Division of General Motors. The drive is then transmitted by a propeller shaft to a spiral bevel gear set on the inner axle of the truck. A reversing gearbox is attached to the engine to give the desired direction of car movement.

The whole car body is one girder structure of stainless steel, fabricated by the Shotweld system, for which Budd is well-known. Corrugated side and roof sheets are used for additional strength, and resistence to minor dents. A transverse bulkhead is installed amidships to carry the engine cooling water to the turtle-like roof radiators.

Passenger comfort is assured with an electro-mechanical air-conditioning plant by Frigidaire. Additional warmth, is required, is obtained by a hot-water system using the engine cooling water, this system having radiators in the car sides at floor level. In addition, extra heat can be added to the conditioned air by connections in the radiator. All these functions are under the control of thermostats.

The vehicle, which measures 85 ft. over couplers, rides on two trucks of 8 ft. 6 in. wheelbase spaced at 53 ft. 6 in. centres. Again unorthodox design is employed in that the side rails of the trucks are tubular, and that all components are welded. Heavy-duty 33 in. wheels are used and run with SKF outside roller bearings.

An operating station is provided in a vestibule at each end of the car. When not in use, the controls are blocked off and the passenger gangway cleared by a door being swung through 180 degrees. Multiple-unit operation is provided and the master controller has two handles. That to the left is for direction, and has forward, reverse and neutral positions. The other has off, idling, second, third and fourth, the latter being fractions of engine power. The torque converter operates only during accelera-

(Continued on page 23)

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COMPETITION No. 1
Closing Date Deferred

Owing to the delay in posting some copies of the last issue, the closing date for the RAILWAYS IN AUSTRALIA COMPETITION No. 1 has been extended to 15th February, 1951, for Australian entries.

ABOUT THIS ISSUE!

You don't like it? Neither do we! But, until we can achieve a solid financial basis, measures like this will have to be taken from time to time, to avoid further delays.

We want to give you a full-sized issue regularly each month. We want to enlarge the magazine, and improve it in every way.

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PLEASE NOTE — WE CANNOT ACCEPT SUBSCRIPTIONS THROUGH SHOPS OR COMMERCIAL AGENCIES. ALWAYS REMIT DIRECT OR TO OUR REPRESENTATIVES.

NEW Q.G.R. ENGINES

New locomotives of the C17 class (4-8-0) are Nos. 970-1, which are painted in the new brown and green colours allotted to this class, and stationed at Mayne depot.

Centenary Train

Victoria's Centenary Train will be started from Spencer Street station by the State Governor, Sir Dallas Brooks, on 1/2/51. (More details next month.)

COAL TRANSPORT
Big N.S.W. Problem

A conference and tour was held by Railways and Joint Coal Board representatives during September, the purpose being to co-ordinate developments for increased coal production. By 1953 the Joint Coal Board expects a yearly output of 18 million tons, and it is expected that existing transport facilities will require drastic replacemenq to meet this traffic. The Railways have placed large orders for coal cars and the electrification to Lithgow will speed up running. One problem facing the Department is whether to increase storage facilities at the mines, such as hoppers and bins, or to attempt to provide enough coal cars to absorb all coal as it is won. A comprehensive report on the subject has been submitted to the State Government.

TRAMWAY NEWS WILL BE FOUND ON PAGES 10-11.

LRTL PUBLICATIONS

We are still awaiting further stocks. Orders will be filled as soon as they arrive.

A useful machine is the B 18¼ Pacific type of the Queensland Government Railways (3 ft. 6 in. gauge). Since 1925, 83 of these engines have been built, exclusive of the current order for twenty. This reproduction of an official photograph shows No. 84, the pattern engine of the class, built at Ipswich Workshops. (Courtesy "Truck & Bus Transportation.")

THE AUSTRALASIAN RAILWAY AND LOCOMOTIVE HISTORICAL SOCIETY
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MEETINGS

The Society holds its Sydney meetings at the Railway Institute, Devonshire Street, Sydney, on the second Tuesday in each month. All visitors are welcome. In Melbourne, the Society's meetings are held at the Railway Institute, Flinders Street, Melbourne, on the fourth Thursday in the month. All visitors are welcome.

FINANCIAL

The subscription rates are fixed at 21/- per annum, which includes the Society's printed Bulletin. Subscriptions are payable in advance. Members in Victoria, South Australia, Western Australia or Tasmania should remit to Victorian Treasurer, and all other members to the General Treasurer.

GENERAL

Back numbers of the Bulletin are still available, and members interested should write to Mr. G. C. Taylor.

Communications in connection with the Bulletin should be sent to Mr. M. A. Park, who will be pleased to receive articles or notes on railway affairs, both historical and current, which might be suited for insertion in the Bulletin.

INTERSTATE REPRESENTATIVES

In addition to the Victorian Branch, the Society is represented in South Australia and Tasmania by the undermentioned members, who are official representatives in their respective States:—

SOUTH AUSTRALIA: Mr. O. Thomas, 31 Torrens Rd., Hillside, S.A.
TASMANIA: Mr. K. Flood, 140 Wellington St., Launceston, Tas.

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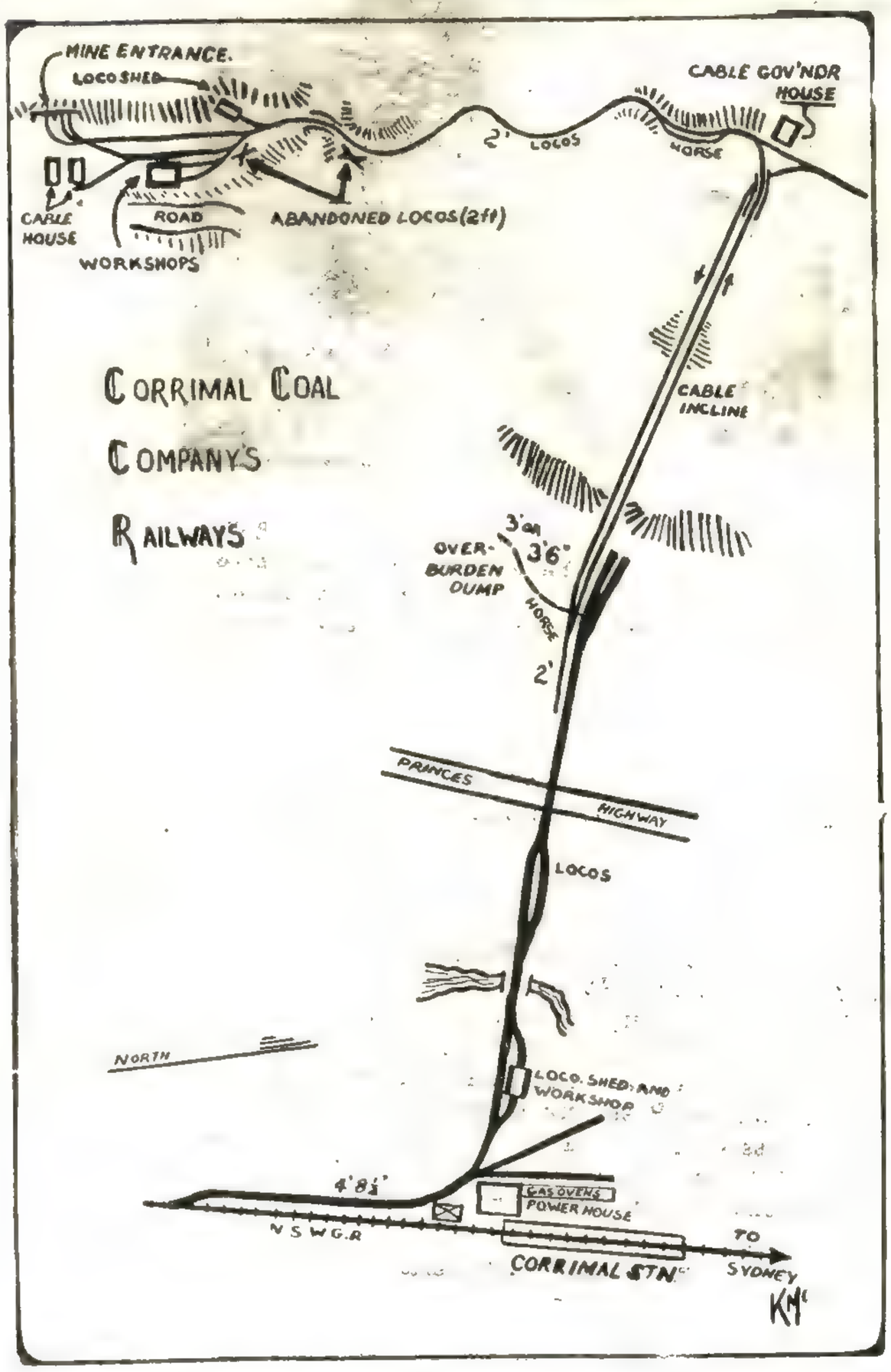

This map was drawn especially for "Railways in Australia" by Mr. Ken. McCarthy.

AN INTERESTING MINE RAILWAY

Corrimal Coal Company

From a correspondent who signs himself "Interurban" come details of a fascinating mining railway at Corrimal, on the South Coast of New South Wales, 48 miles from Sydney. Like most other near South Coast towns, Corrimal is situated on a narrow plain with a steep escarpment leading to nearby hills, in which extensive coal mining operations are carried on.

This topography has been the incentive for a variety of ingenious schemes for getting coal from the mines (which are usually of the tunnel variety) to the main-line railway and jetties on the coast. The Corrimal Coal Company has been no laggard in this respect; their system is, as our correspondent observes, run by four means of traction—steam, cable, horse, and man!

Man presumably propels the skips in the mine tunnel itself; at the entrance, steam locomotives take over for a ¾ mile haul along a 2 ft. gauge track. Horses then do their bit for a short distance to the top of an incline. The latter is gravity-operated, the weight of the full skips descending being used to haul up the empties, and is half a mile in length. At the head of the incline, the cable is attached to a large flywheel, kept at a constant speed by a "brakeman."

At the foot, coal is transferred into 4 ft. 8½ in. gauge cars, which are hauled by the company's locomotives for a further ¾ mile to the junction with the South Coast line of the New South Wales Railways.

It is under consideration to replace the whole of the 2 ft. gauge section by a cable incline direct from the tunnel mouth to the terminus of the standard gauge line.

The locomotives used by the Company will be described briefly and illustrated next month.

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ELECTRIC TRACTION

TRAMWAY — TROLLEY BUS — ELECTRIC RAIL

Formerly published separately as "Tram Tracks"

FORTY YEARS AGO

Steam tram in Scott Street, Newcastle.

(See next page.)

OPERATION "STRIKE"

By K.S.K.

(Concluded from Previous Issue)

Flemington: Tuesday, 7/11/50. Time of observation, from 3.33 p.m. to 6.35 p.m. Approaching from the city along Racecourse Road, there is a trailing crossover just before entering Epsom Road. This was not used during the afternoon About 30 chains along Epsom Road there is another trailing crossover, with one more about 17 chains further on. Immediately round the corner in Union Road there is a third track capable of storing some 19 cars. On this siding were accommodated 15 cars (8 Essendon, 4 Preston, 3 Hanna Street), which were added to later. It is interesting to note that of 31 specials supplied by Essendon, 13 worked via Flemington Road, while the remaining 18 came via the Ascot Vale and Maribyrnong Roads connecting line.

Cars were supplied as follows:—Essendon Depot, 45 cars, 16 making one trip, 19 making two trips, and 10 making three trips, a total of 84 trips; Brunswick, 7 cars, 3 making one trip, 3 making two trips, and 1 making three trips, a total of 12 trips; Hanna Street, 4 cars, 3 making one trip, one making two trips, a total of 5 trips; Preston, 4 cars, each making one trip. A total of 60 cars, making 105 trips.

"Up" cars ran on the following routes:—City (including one "City via Haymarket"), 44 cars, 25 of which made one trip, 15 made two trips, and 4 made three trips, giving a total of 67 trips. City via Nth. Melbourne—worked by all regular service cars, plus four specials, one of which made two trips. On this route, 3 cars made one trip, 8 cars made two trips, and 6 cars made three trips, giving a total of 18 cars working 37 trips.

"Down" cars ran through to Ascot Vale (8 trips), Maribyrnong River (14 trips), and West Maribyrnong (9 trips), making a total of 31 trips worked by 14 cars.

During the 30 minute period between 5 p.m. and 5.30 p.m., 45 cars departed for the city, at an average of one every 40 seconds, although for

G. FRASER, East Brisbane, Q'ld—Thanks. Hope magazine is up to expectation.

THE AUSTRALIAN

ELECTRIC TRACTION ASSOCIATION

Affiliated with

The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. P. W. Duckett, 69 Howitt Rd., CAULFIELD, S.E.7 (Phone: LF 1665)

If outside Victoria, communicate with the nearest representative:

ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham S.A.
AUCKLAND: Mr. G. C. Stewart, 74 Fowlds Ave., Sandringham, W.2
BALLARAT: Mr. W. Jack, 31 York St., Ballarat East, Vic
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NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary, Sydney Branch, 56 Stuart St., Longueville, N.S.W.
WELLINGTON: Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.

THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.

THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.

VISITORS ARE ALWAYS WELCOME.

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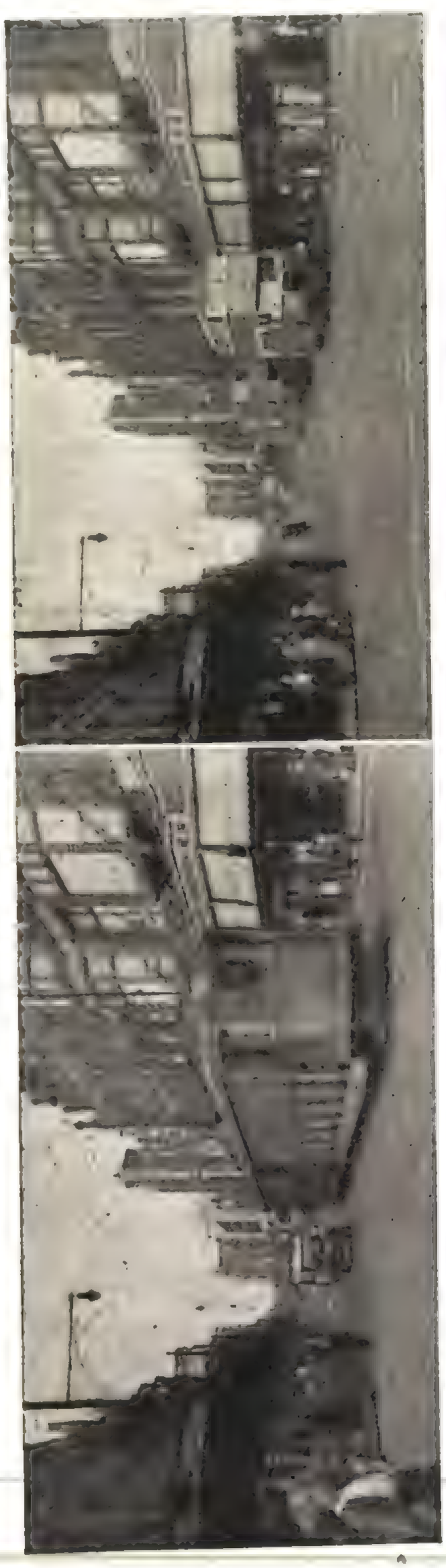
NEWCASTLE — THEN AND NOW

Three Forms of Street Transport

Publicly-owned street transport in Newcastle, N.S.W., commenced operation in 1887 with a steam tramway service. Electric trams first appeared in 1923, the last steam tram running as late as 1931. A third phase began with the conversion of two electric tramway routes to operation by diesel buses in 1938. Ten years later, a start was made to convert the entire system, and the last tram ran on the Waratah route in June last year (see R. in A. — 7/50). Whether this constitutes progress is still a subject for debate, several proposals having been made for the re-introduction of tramway services.



Pictures on this page show: (Top) Both forms of transport in Hunter Street and (Centre) at Gordon Avenue Depot; (right) standard steam motor and trailer with electric car at the transfer station at Wallsend. All electric cars shown are of the LP class which operated all passenger service at Newcastle; others are still in service at Sydney, from which the Newcastle cars originally came, both systems being operated by the New South Wales Department of Road Transport and Tramways.

These illustrations, mostly from the collection of Mr. Ken Magor, are made available through the courtesy of "Truck & Bus Transportation." A brief history of the Newcastle lines, with track map, will appear soon.

RESTORATION WORK AFTER BIG N.S.W. FLOODS
PARTIAL RE-OPENING OF DORRIGO BRANCH

The year 1950 will long be remembered in New South Wales for the widespread, disastrous floods which halted rail and road traffic over most of the northern, north-western, and north coast areas of the State, as well as causing damage running into millions of pounds to goods, crops, livestock and property. Most hard-hit rail line was the 43-mile branch from Glenreagh (405 miles from Sydney, on the main North Coast line) to Dorrigo. This line, which runs through mountainous country, abounds in gradients and heavy construction work.

After months of work, the line was re-opened on November 6th last for goods traffic only to a temporary terminus at Megan (8½ miles from Dorrigo). To handle terminating traffic at Megan, additional sidings and signalling were installed, including runaway catchpoints facing Up trains. At a point on the main line about 350 feet beyond the Up Home signal, a Stop block, Stop board, and red lamp have been installed, preventing any train from proceeding further.

Owing to the weakened condition of the track, only 19 class (0-6-0) locomotives are now permitted to run between Glenreagh and Megan. Previously "standard" goods locomotives (50, 53, and 55 classes) were employed on the line.

Because of the restrictions, three 19 class engines have been stabled at Glenreagh, viz. Nos. 1913, 1931, and 1954. Since 1931 is fitted with a six-wheeled tender, it is not permitted to run goods trains, but is restricted to ballast working.

As turning facilities are not available at Megan, engines run tender-first from Glenreagh; bogie tenders are limited to 20 m.p.h. and the rigid wheelbase tender to 15 m.p.h. Authority has been given for 1913 and 1954 to work as double-headers, in which case they can haul 500 tons on the Up journey, and 450 tons on the Down trip.

It is hoped that service will be restored between Megan and Dorrigo early in 1951.

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DOUBLE LINE WORKING TO MINIMBAH
N.S.W.R. Northern Line

Single-line electric staff working was superseded by double-line running between Pothana and Minimbah (140¾ miles from Sydney) as from 14th November last. Automatic colour-light signalling is used. The crossing loop at Pothana, together with the signal box and the original equipment, has been removed. At Belford new Down and Up refuge loops have been provided and are electrically controlled from Branxton box.

PROPOSED NEW NORTHERN CUT-OFF
Estimates Being Prepared

The route for a new railway to connect the northern coalfields of New

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South Wales with the Newcastle-Sydney line, to provide a detour around areas liable to heavy flooding, is under examination. To date the most favourable location appears to be from Dora Creek to Allandale. This line would be 22½ miles in length and would cross the privately-owned South Maitland Railways line at Neath, near Cessnock.

Railway Department engineers are preparing an estimate of cost for this route, and the scheme will be submitted to the Minister for Transport (Mr. Sheehan) for presentation to the State Government.

N.S.W.R. Notes

On 14th November, two test trains of non-air coal hoppers were run from Newstan Colliery, Fassifern, to Port Waratah, Newcastle. Special permission was given for the trains to be assisted by a banking engine in the rear between Fassifern and Mileage 89.50. The bank engine, which ran uncoupled, returned to Fassifern on a Wrong Line Order.

A dead-end siding, 380 feet long, has been installed at the Up end of Cootamundra station (Main Southern line) for stabling the Temora diesel train.

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News from South Australia

As the equipment of the existing Brill railcars falls due for renewal, it will be replaced by new engines and transmission to permit multiple-unit operation.

The programme for construction of 30 new railcars and trailers has been approved, and building will commence early in 1951. The motor cars will be powered with two 200 h.p. engines.

Also planned for construction at Islington workshops are 500 new freight cars of various types.

New luxury cars for the "Overland" express (Adelaide-Melbourne) continue to appear. Roomette and Twinette cars are to be followed by attractive sitting cars.

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Commonwealth Railways

It is understood that the Commonwealth Government is anxious to proceed with the conversion to standard gauge of the Port Augusta - Leigh Creek section of the Central Australian line, with the rest of the route to Alice Springs following later. However, opposition is being encountered for the proposal to relocate the line west of the Flinders Ranges between Port Augusta and Brachina, instead of passing through the Ranges at Hawker. Local interests at Quorn and Hawker are protesting at being by-passed.

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V.R. Notes

The brilliant green-and-gold colour scheme of the cars for the Centenary Train have been attracting attention in the North Melbourne yards. Composed principally of PL class cars with corridor connections this train will be seen throughout Victoria in connection with the

celebrations of the 100th Anniversary of separation from New South Wales. Seating has been removed and suitable exhibits presented.

A B O U T E N G I N E S

VICTORIAN RAILWAYS CONVERTING S300 CLASS TO OIL BURNERS
Lack of Good Coal Hampers "Spirit of Progress"

The Victorian Railways have decided to convert the four streamlined Pacific locomotives of the S300 class to burn oil. Owing to the increasing difficulty in obtaining good-quality Maitland coal, and wide variations in the calorific value of the coal obtained, it was considered that only by using oil fuel could timekeeping be maintained. The S class locomotives are employed regularly in hauling the "Spirit of Progress" and the Albury Express. Of late the otherwise non-stop "Spirit" has been delayed by enforced stops to clear the ashpan and clean the fire due to the use of poor coal. It is stated that rising cost of coal is reducing the price margin which discouraged use of oil in the past.

PORT KEMBLA LOCOMOTIVE NEWS
New A.I. & S. Diesel Electrics Haul Coal Trains

Australian Iron & Steel Ltd., Port Kembla are now employing the new diesel electric locomotives on trains of up to ten of the new 60-ton hopper cars in coal traffic. So far three of the new diesels are on hand and are running trains on the new high-level line between Nebo Colliery and the Coke Ovens.

EX-P.W.D. LOCOMOTIVES RETURN

Engines Nos. 28, 29, 79, and 80 have returned from Eveleigh shops following overhaul, and are now finished in NSWR black with red head-stocks. They retain their original P.W.D. numbers, which now appear on the headstocks, NSWR style.

Nos. 1310, 1801, 1803, 1805, and 1806, all NSWR locos sent down to Port Kembla while the ex-P.W.D. engines were being overhauled, are still on hand.

N.S.W.R. NOTES
More 58's in Service

New 4-8-2 locomotives of the 58 class entered service, 5804 during the week ended 14/10/50, 5805 during the week ended 18/11/50, and 5806 during December. Like other engines of this class, they are limited to 40 m.p.h.

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E L E C T R I C R A I L W A Y N E W S

A 7-car train of new-type vehicles has been assembled on the Melbourne suburban system, the motor cars being Nos. 456M, 457M, and 459M. These cars are fitted with experimental equipment designed to increase the rapidity of brake application, but the equipment, which can be cut out, may not yet be in operation.

It is reported that work has commenced on the construction of the experimental Co Co electric locomotive for the New South Wales Railways. Previously this machine was reported cancelled, orders having been placed for 40 similar machines with an overseas firm.

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T R A M W A Y N E W S

MORE FARE INCREASES
Melbourne and Launceston Systems

New fare scales for the Melbourne & Metropolitan Tramways Board system were raised as from 24th December, the increase being 1d. on each fare. The scale thus becomes: 1 section 3d., 2 sections 5d., 3 sections 6d. etc. Footscray routes (isolated from the main system) remain unchanged at 3d. per journey. On the All-night cars, steep increases have been made, viz: 1 or 2 sections 6d., 3 sections 9d. etc. with a maximum of 1/6d. The view of the Chairman (Mr. R.J.H. Risson) is that these services should not be a charge on revenue, particularly as most passengers using them are shift workers on penalty rates of pay.

On the two lines operated by the Victorian Railways, fares were increased by ½d. each as from 18th December. On the Brighton route, the first section is now 3d., with 2 sections 4d. etc. At Sandringham the first section is 3½d., through fare 4½d. In addition, combined tram/train tickets have been increased by 1d for single fares to the first section, 1½d. to other sections, on each tramway.

New rates have been in force at Launceston since 7th December. Minimum fare is now 4d. for weekdays, 5d. for weekends and holidays. Passengers travelling through the city from one outer terminus to another now pay 1/1d., the Council having decided against the use of transfers on the score of lost revenue and possible abuse.

QUEEN'S SQUARE LOOP OPENED
New Sydney Terminus

On Sunday, 10th December, the new terminal loop in Queen's Square for trams on the Watson's Bay route was opened. No cars will now run down King Street to the former terminus at Erskine Street, service being provided by a new bus route (316) from King's Cross to Queen's Square, thence by a devious route to Erskine Street. Suggestions have been made that trams run in King Street during off-peak periods and at week-ends, but until tramway officials have studied operations, no decision will be made. Alleged by the authorities to be a success, the new arrangement is most unpopular with passengers, the Xmas shopping period being particularly difficult.

The King Street line was opened for cable traction on 19/9/94, and electrified throughout in 1905.

First car over the loop in passenger service was No. 1985.

Extra cars for peak services, formerly provided by Fort Macquarie Depot now come from Waverley because of shunting problems. Fort Macquarie has taken over the Bellevue line from Waverley in exchange.

LATROBE STREET AT LAST!

Held up for many months by lack of materials and manpower, the new Latrobe Street line in the city area of Melbourne is to be in regular use from Monday, 15th January. From the former terminus in Spencer Street, the new line runs via that thoroughfare, Latrobe Street, and Victoria Parade to the junction of the latter with Gisborne Street, Eastern Hill, a total length of about 1½ miles. It is intended eventually to divert a proportion of the peak hour traffic from Collins Street. For the time being, however, shortage of staff will prevent this, and a limited service will be provided by extending Hawthorn cars (Route 27) from Spencer Street to Brunswick Street, Eastern Hill, with a frequency of 10 minutes (5 minutes in peak hours). No service will be provided at night, on Saturday afternoons, or on Sundays or holidays. The new line has double track connecting curves around the S.E. corner of William Street, a single track connection from the westbound line at Elizabeth Street and three crossovers in Latrobe Street, with a fourth at Nicholson Street, Eastern Hill.

AROUND THE SYSTEMS

MELBOURNE Preston Workshops being closed over the holiday period new SW6 class cars from 967 onwards will not appear until January. No. 969 will be the last car to have dash-canopy headlighting, standard headlights being used thereafter. At the beginning of December, bodies were constructed up to No. 978.

From 16/10 to 10/12, the Victorian Railways' tram routes were closed because of the State-wide railway strike. Resumption took place among scenes of local rejoicing, although at Sandringham, considerable time was needed to clear the tracks of accumulated debris. No. 43 returned to Elwood from Sandringham during December, after its third visit to the southern route to allow for overhaul and painting of local cars.

The Government has promised that a new authority will be set up to coordinate State transport during 1951, and it is understood that, when constituted, it will decide the future of the two V.R. tramways. Indignation is still rife at Sandringham, where the track is so bad that serious accidents are feared by local residents, who want the line improved and retained.

SYDNEY Spring Street, City, has been re-laid, and work continues on the Chatswood line (North Sydney system). New destination rolls coming into use do not have the symbols formerly used for Miller's Point, Glebe Point, and Fort Macquarie, among other termini. Plain white letters on a black ground are used.

NEWCASTLE The report by the A.E.T.A. on the restoration of trams in Newcastle was submitted to the city council in November last. The report, covering 24 pages, with illustrations and diagrams, was drawn up by the Association at the request of the council. The plan involves council operation of a restored tramway service using, in the initial stages, cars purchased from Sydney and Melbourne. These would ultimately be replaced by P.C.C.-type vehicles. A large loan would have to be raised to rehabilitate tracks and overhead wiring.

HOBART Trams will cease running on the North Hobart route in January. This short route has been largely redundant.

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OPERATION "ARMOUR PLATE"

GREATER SAFETY FOR MELBOURNE TRAMDRIVERS

By K.S.K.

Although these lines are for the purpose of recording the current installation of "Armour Plate" glass in cars of the M. & M.T.B. fleet, it is interesting to note that "Safety" glass was first introduced many years ago. With the introduction of the SW5 class cars, with their semi-bulkheads between the saloons and smokers' compartment the bulkhead glass was supported on only three sides. Under such conditions, there would have been too many breakages in traffic through the inertia of passengers near the bulkheads, with the varying speeds of the car. This was overcome to a large degree by the use of "Melite" safety glass. This consists of two sheets of glass, separated by, and held together with, a thin sheet of celluloid. This glass was also used in the sliding doors that were first introduced regularly in the same class cars. This type of safety glass can stand considerable pressure, but when finally broken, tends to break into splinters, with razor sharp edges, similar to ordinary glass. For this latter reason, it was useless to install it in the drivers' cabins of cars. Some time ago, it was decided to use "Armour Plate" glass in the cabins. This type is merely ordinary glass that has undergone special treatment. It is precut to the size required, and heated in a furnace. On withdrawal, it is chilled by a blast of cold air on each surface. This means that the outside cools faster than the inside, and forms an exterior skin, which creates a state of tension. When broken, this tension is released, and the glass shatters into multitudes of tiny fragments, which are themselves very brittle. Consequently, the possibility of receiving even a minor cut is very small.

All cars from 840 are fitted with "Melite" safety glass in both sliding doors and saloon-smoker semi-bulkheads. In addition, all new cars from 940 onwards, are being fitted with armour plate glass in the windshields and motormens' doors. It is interesting to note that a trial set of chromium channel edgings was fitted to SW6 class Car 896, to protect the exposed edge of the semi-bulkhead glass.

Cars of the W2 class are at present being reglazed with "Armour Plate" glass at each end. To date, three variations are in service. The original scheme catered for the installation of the new glass in the windshields and motormens' doors only. Two metal plates are placed over the bulkhead glasses, adjacent to the emergency exit door, and are painted battleship grey on the saloon side. The second series extended the Armour Plate glass to the outer halves of the motormen's bulkhead glasses. The third batch of cars has the new glass in all panels of the bulkhead, but the metal plate has been modified to obscure only the upper half of the inner panel, thus leaving the lower half transparent. This is very acceptable from the passengers' point of view (and also to traction enthusiasts who like watching the motorman's movements). Unfortunately, the light entering the cabin, especially after dark, produces a mirror effect, which tends to confuse the motorman. Consequently, it is intended to revert to the second series, to which it is hoped eventually to convert all cars.

A. E. T. A. N O T E S

MELBOURNE BRANCH - DECEMBER MEETING

The December meeting was given over mainly to a general discussion on various subjects, including future Association events, and a fairly lengthy and interesting session of Tramway Topics. Included was a very comprehensive report on the situation in Sydney and Newcastle, given by the President of the Sydney Branch - Mr. K.W. Miller - whom the Chairman made welcome, together with two other visitors, Messrs S. Wahlstroem and R. Born. A new member - Mr. W. Hartley - was admitted, while Mr. R. Born was nominated.

It was announced that Mr. L. Marshall-Wood would shortly move to the Bendigo district, and it was decided that he should be appointed as our Bendigo representative. Mr. Marshall-Wood is a foundation member of this Association, and has carried out extensive research into the past histories of many Tramway Systems, as well as keeping up-to-date and recording current events. He is also Tramway News Editor to this Magazine.

A series of films will be shown by Mr. K. McCarthy, a Sydney member, at the January meeting. It is hoped that Mr. J.B. Stranger will be able to give an illustrated talk on South American Tramways, from data supplied by our representative in that continent - Mr. Baird - at the February meeting.

SYDNEY BRANCH - NOVEMBER MEETING

At the meeting held on November 17, it was announced that the Newcastle Report was now in the hands of the Council of the City of Greater Newcastle, and would be considered by the Works Committee of that body at their forthcoming meetings. The report received a very favourable write-up in the "Newcastle Morning Herald". (A condensed version will appear in this magazine as soon as possible. - Ed.).

Two new members were admitted to membership, namely - Mr. E.G.Skiller of Temora, and Mr. O.V. Weatherhead of Sydney (formerly of London).

A beautifully-made tea-cosy presented to the branch by Mr. N.L.Chinn's mother, and a tin of English cigarettes presented by Mr. H.W. Perry, were raffled to raise funds to help pay for our extensive publicity programme. The cosy was won by Mr. Weatherhead, and the cigarettes by Mr. Read.

The remainder of the evening was given over to an auction sale of photographs, tickets etc. presented by members. The amount raised by these means, and by our very successful theatre night held earlier in the month, will be announced later.

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M E L B O U R N E

ANOTHER SPECIAL TRAM TOUR BY P.C.C.
(By arrangement with M. & M.T.B.)
SATURDAY, 3RD FEBRUARY

Leaves MALVERN DEPOT at 2 p.m.- returns 5 p.m. Runs via NEW LATROBE STREET LINE. Afternoon tea at Point Ormond. Bookings - 'phone XB 6492.
Fares: Adults 4/-: Children 2/-.

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PRINCIPAL N.M.R.A. STANDARDS FOR O AND HO GAUGES
(See Model Railway Section)

		O		HO	
1.	TRACK GAUGE	1.250"	(1¼")	.650"	(16.5 mm)
2.	TRACKWORK:-				
	Minimum Check Gauge Distance	1.172"	(1-11/64")	.600"	(39/64)
	Flangeways	.078"	(5/64")	.050"	(3/64)
	Outside Third Rail Centre - out from Gauge	11/16"		5/16"	
	Third Rail Top above Running Rail	1/8"		1/16"	
3.	WHEELS:-				
	Maximum Back to Back of Flanges	1.125"	(1⅛")	.570"	(39/64)
	Maximum Check Gauge Distance	1.172"	(1-11/64)	.600	(39/64)
	Minimum Tyre Width	.172	(11/64)	.108"	(7/64)
	Maximum Flange Thickness	.047"	(3/64)	.030"	(1/32)
	Maximum Flange Depth	.062"	(1/16)	.035"	(1/32)
	Minimum Tread Width	.125"	(1/8)	.078"	(5/64)
	Unilateral Tolerances - General	.007"		.004"	
	Maximum tolerance for running "Out of Round"	.002"		.002"	
	Tread Angle	3 degrees		3 degrees	
	Flange Taper, both sides	10 degrees		10 degrees	
4.	SOLID KNUCKLE COUPLERS:-				
	Centre of Coupler above Top of Rail	11/16"		25/64"	
5.	DOUBLE TRACK CENTRES -				
	Minimum Clearance, Straight Track	3½"		1 - 25/32"	
6.	ELECTRICAL:-				
	Propulsion Voltage	12 Volts D.C.		12 volts D.C.	

Note:- When A.C. operation is desired, 16 volts are required to operate universal motors designed to operate also on 12 volts D.C.

Polarity. For all gauges, when using polarised direction control, Positive potential on the Third Rail, Trolley Wire, or Right Hand Rail, shall produce Forward Motion. For two Rail operation, Locomotives will be grounded to Right Hand Rail.
Lever on Hand Reverse devices will indicate direction of motion.

7.	BOLSTERS:-				
	Centre Bolster Bearing above Top Rail	Freight	17/32"	5/16"	
		Pass	43/64	3/8"	
	Side Bolster Bearing above Top rail	Freight	5/8"	-	
		Pass	49/64"	-	
	Diameter of Centre Bearing Pad		1/4"	Not to exceed 3/8"	

8. TRUCKS AND AXLES:-

	O	HO
Axle Diam. outside of Wheels	.094" (3/32)	.062" (1/16)
Overall Length of Axle	1.813" (1-13/16)	.985" (63/64)
Wheel Bearing Pad Diameter	.188" (3/16)	.125" (1/8)
Inside Face to Face of Truck Sides or Side Bearings	1-35/64"	53/64"
Axle Hole Inside Diameter	.098(No.40 drill)	.067 (No.51 drill)

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L E T T E R S T O T H E E D I T O R

TASMANIAN RAILWAY TUNNELS

Dear Sir,

May I draw attention to what I am sure is an error on page 23 of the May, 1950, issue, in the article on Railways of Tasmania by 'Overlander'. It is stated that the Rhyndaston tunnel is the only one on the Tasmanian Government Railways. There is another on the North-eastern line, between Launceston and Scotsdale, 25¾ miles from Launceston. I've been through it! Also, the article misspells the name Rhyndaston.

Yours, etc. "LIGHT ENGINE".

- - - - - - - - - -

FEDERAL MILL TIMBER TRAMWAY

Dear Sir,

Re the Federal Mill timber tramway, Big Pat's Creek. This tramway is now extinct. It is some months since workmen pulled up the last rail. All rails and switches and metal gear of all sorts capable of being salvaged without need of over-exertion has been removed to La La Sidings. Some of the wooden sleepers between La La and Big Pat's Creek have been lifted - maybe for the purpose of firewood.

About four months ago, the timber bridge over the Yarra at La La gave way; one of the timbers supporting the track snapped and pitched an 0-6-0 loco into the Yarra. The loco was recovered little the worse, and was put up for sale. An Auctioneer and Insurance Agent at Warburton had three large photos on show in his window. The loco itself could be seen alongside the salvaged rails adjacent to the Victorian Railways sidings at La La.

Yours etc. L. L. ROBINSON

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STEAM LOCOMOTIVES VERSUS DIESELS

Dear Sir,

I was much surprised to read (R. in A. - 9/50) that diesel-electric locomotives are the only solution for increasing the traffic capacity of the "Hills" section of the South Australian Railways, without costly track improvements, and that more powerful steam locomotives were out of the question because of axle-load restrictions. I cannot understand how such extraordinary statements can be made, and to show just how incorrect they are, I should like to point out that steam locomotives which have a lower axle-loading and a higher tractive effort than the two diesels put together have been in operation for over 20 years on 3 ft. 6 in. gauge. These are the class GL Garratts of the South African Railways.

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I should suggest, therefore, that a modern, 10-coupled Garratt, designed for 5 ft. 3 in. gauge, with heavier rail, would have even greater hauling capacity, and could be expected to haul more ton-miles per train-hour over any given section than costly diesels.

As regards the sustained tractive effort of the proposed diesels enabling freight trains to be run at passenger speed, I would point out that diesel-electrics at full throttle cannot be operated at less than about one quarter of their top speed, owing to the risk of damage to traction motors. Now, even at this minimum speed, they develop only about half their starting tractive effort, which can be sustained only for short periods at a time, whereas a steam locomotive can develop its maximum tractive effort for as long as is necessary, which renders steam much superior for tough mountain work. Steam locomotives are also far superior to diesels for power at speed, as the following comparison will show: At 35 m.p.h. a 4-unit diesel develops less than one quarter of its starting tractive effort, whereas a 2-10-4 steam engine develops more than half of its starting tractive effort.

Straight electric locomotives are much more capable machines than diesel-electrics, yet the Norfolk & Western Railroad has just scrapped its electric locomotives in favour of steam engines. It is also significant that this railroad has no diesels at all, but hauls more ton-miles per train hour than any other major U.S. railroad. Furthermore, official I.C.C. figures show that the N. & W. class A 2-6-6-4 steam locomotives handled an average train somewhat more than twice as large as the average for the country's road freight diesels, and handled it at a considerably higher overall speed. Their magnificent class J 4-8-4 steam engines also make higher daily mileages than the average for American diesel passenger locomotives.

Owing to the fuel position, and the numerous diesel disadvantages, diesel traction in this country would be even more ridiculous than it is in the U.S.A. It is regrettable that diesel propaganda apparently causes railway officials to think that modern steam locomotives are unworthy even of consideration. I believe I have shown that much more powerful steam locomotives can be used most efficiently on the "Hills" section without any track improvements at all. Each engine could be expected to haul considerably more than twice the present load at a higher speed, which is, I feel sure, more than the diesels could manage, even at a higher cost.

Yours, etc. ROGER BOLAND

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F A N M A I L

(The Editor regrets that he is, in general, unable to reply direct to readers' letters. All are read with interest, however, and, if of general interest, are published).

E.M. LOVEDAY, Mossman, Q'ld. - Your letters will appear in the next issue. I'm afraid it's a bit late to take up your idea now.

ROGER BOLAND, Sarins, Q'ld. - Thanks for good wishes. Have drawn the attention of S.A.R. to your letter. Principal reason for scrapping N. & W. electric was track re-location which removed the heavy adverse gradients which prompted original electrification.

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HOLIDAY BY RAIL

By C. Einsiedel

(Continued)

In this instalment, Mr. Einsiedel comments on features of interest encountered on the journey to the New South Wales border, and locomotive performance experienced. Future instalments will describe his railfan tour of the Mother State.

What interested me particularly about the S class Pacifics used on the Victorian Railways' "Spirit of Progress" was the arrangement for the transmission of power from the third (centre) cylinder. The connecting rod operates on a crank in the centre of the axle of the second, or main, pair of drivers; this necessitates the axle of the leading drivers being a fixture and having a downward camber, or joggle, in the middle, about four inches. With the springs out to their limit, this gives a clearance between the con. rod and the axle of almost an inch when the piston is half-way along its backward stroke with the engine moving forward.

The North-East track to Wodonga, and thence across the Murray to Albury, is a speedway when compared with the country traversed by the main lines of the New South Wales Railways, but, with 73-inch drivers, the S has quite a bit of hard work getting the load over the Great Dividing Range at Heathcote Junction (1,145 feet), 33 miles from Melbourne. The heaviest pull is up the 1½-miles Glenroy Bank, seven miles out; on a grade of 1 in 50, and still in the suburban area. Speed usually drops below 15 m.p.h. through Glenroy, where the grade eases to an average of 1 in 82 for the next 1½ miles to Broadmeadows. Here, easier conditions prevail until a mile past Donnybrook (20½ miles), where the track commences to rise 250 feet, ending with a 1 in 52 pinch into Beveridge (26 miles). From there, 156 feet elevation is gained in seven miles to the summit, the last half mile at 1 in 50, presenting no difficulties, and this generally applies to the remaining 157 miles to Albury.

Double track is left behind at Mangalore (68 miles), after which the only grade of note is two miles of 1 in 75, to breast Putter's Range through Rowan's Gap at Glenrowan (136 miles), but this is preceded by a straight and almost level stretch of two miles.

The schedule allows 56 minutes for the 33 miles from Melbourne to the summit, and 32 minutes for the next 27 miles to Seymour. The drop in the latter section is 681 feet, and, although the numerous curves — especially in the first ten miles — have a radius of not less than 40 chains, speed is restricted somewhat. The 127 miles from Seymour to Wodonga (schedule, 133 minutes) is covered at well-sustained speed, the maximum permissible being 70 m.p.h. Owing to the slowing at Wodonga for manual staff exchange, and to negotiate a 20-chain curve immediately thereafter, the last 3¼ miles to Albury cannot be covered in less than just under seven minutes.

In leaving Melbourne, Driver Padgett was in charge of S 301, "Sir Thomas Mitchell," with a nett load of 562 tons, due to the heavy dining car "Avoca" (75 tons) being used in place of the standard car. As on two previous trips, I found that the schedule is too tight for the maximum load on the uphill run. Through the suburban area, on the climb of 378 feet to Broadmeadows (10½ miles), 3¾ minutes were lost on the booked time, and, by the time Heathcote Junction (33 miles) was passed, the debit had increased to 6 minutes 40 seconds. This was reduced to 3 minutes 23 seconds on the run to Seymour, where a dead stop in the platform road raised eyebrows. It transpired that a couple of Melbourne lads had decided that Sydney was a better place! They were discovered by the conductor, and he had the train stopped to enable them to be sent back on the Up Passenger, which was passed a few minutes later. The halt cost 1 minute 12 seconds, in addition to the loss of time in slowing down and recovering speed. A further check to 5 m.p.h., owing to culvert renewals, resulted in the 8½ minutes allowance for the 6¾ miles to Mangalore being exceeded by 4 minutes 1 second, which made the train 8 minutes 25 seconds late there. This presented an incentive to the driver, who, under a clear road, gradually lessened the gap to seven minutes at Benalla. The next 24 miles to

Club Notice Board

Railway, Tramway, Engineering, etc., clubs and associations are invited to use this space free of charge to advertise meetings and other events. Matter for inclusion in this section should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU 7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville.

THE VICTORIAN MODEL RAILWAY SOCIETY meets at 8 o'clock on the third Wednesday of each month at its Headquarters in Siddeley Street, between Spencer Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, 22 Whish Street, EAST BRISBANE, Q'ld.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

Meetings last Saturday night in each month at 8 p.m. in Club House, at above address.

Interstate visitors given warm welcome.

Secretary: R. R. Steward, same address.

THE AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY meets regularly as follows:—

SYDNEY BRANCH: Railway Institute, Devonshire Street, Second Tuesday in each month. Secretary: H. H. Matthews, 27 Ross St., PARRAMATTA, N.S.W.

MELBOURNE BRANCH: Railway Institute, Flinders Street, Fourth Thursday in each month. Secretary: R. B. McMillan, 15 Mercer Rd., MALVERN, S.E.3.

QUEENSLAND SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings every month; contact the Secretary, Mr. C. H. Garner, Gray's Rd., GAYTHORNE. Model Railway Section with operating O gauge, and HO under construction, meets first and third Mondays; contact the Secretary, Mr. C. Harrison (B3508), or the Public Relations Officer, Mr. C. McTaggart, 101 Laura Street, TARRAGINDI.

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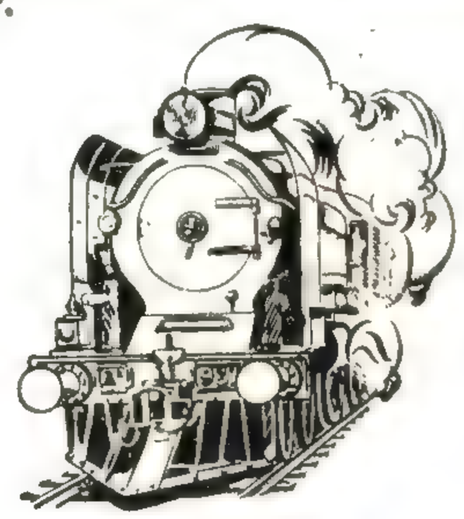

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...angaratta were covered in 24 minutes 10 seconds, and, as this included the bank at Glenrowan, 5 minutes 40 seconds late there, was good progress.

...ecovery continued over the final ...ges, and Wodonga was passed, ...hree minutes late, Albury be...ched only 55 seconds behind ...e arrival time of 10.20 p.m. With the stop and the permanent way slack taken into consideration, this ...esents a gain of about four ...es on the schedule. I under...hat the enginemen use Ben... measuring stick, regarding ...p to six minutes late there as ensuring an on-time arrival at Albury.

(To be continued)

BOOK REVIEW

THE RAILWAYS OF BRITAIN
By W. H. Boulton
(Sampson Low, London.)

Scarcely a month passes without the appearance of a new book on British railways. Often good, occasionally dreadful, they usually attempt to cover every aspect of railway operation in the United Kingdom. This latest addition to the library is wide in its scope, but the author (an ex-railwayman) avoids technical matters, providing instead a readable, rather general, account of the various lines now comprising British Railways. The subject is approached from the angle of why and how railways came to be built in various parts of the country, and how they grew and were amalgamated, finally reaching their present state of existence as British Railways.

(384 pp., 8½ in. x 6½ in., hard cover. Our copy, McGill's Agency, 28/-.)

ERRATA

October/November issue: Page 1, col. 2, "K2 class" should be "Ka class." Page 2, col. 3, last line of S.A.R. news should read "and will have numbers 900-909 inclusive."

More Railway News will be found on pages 7-9.

Some idea of the crowds conveyed by Melbourne trams during the protracted rail strike can be obtained from these "Age" pictures taken in Collins Street, near the Swanston Street intersection. Making use of express running in the suburbs where possible, trams succeeded in maintaining schedules remarkably well, despite heavy loadings and dense motor traffic. The cars shown are of the W 2 class.

Question Box

Address enquiries to "Question Box, c/- Railways in Australia, 29 Seymour Grove, Brighton Beach, S.5, Vic." It is regretted that direct replies cannot be posted to correspondents.

Mr. H. J. Dunn, of Melbourne, asks: When did the last cable tram run in (a) Bourke Street, Melbourne; (b) Melbourne; Sydney (and on what route)?

ANSWERS: (a) and (b) During the evening of 26/10/40; the Bourke Street routes were the last converted. (c) 1905 (King Street line to Ocean Street).

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AUSTRALIAN MODEL HOBBIES

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MODEL RAILWAYS in Australia

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"Railways in Australia" LAYOUT COMPETITION No. 1

A correspondent who plans to build a model railway system wants ideas from our readers to help him with the project.

To obtain these, he offers a prize of one year's subscription to "Railways in Australia" for the best layout design received which fulfills the conditions set out below.

Entries should be in ink, and on one side of the paper. If necessary, explanatory notes can be on a separate sheet.

Requirements for the layout are as follows:—

1. HO gauge, 2-rail.
2. Dimensions—9 ft. x 6 ft.
3. Station and yards, with continuous run if possible.
4. Station to have main and branch platforms.
5. Trackwork to be simple—no slips or complicated points.
6. Curves 2 ft. minimum radius on main line.
7. Motive power:
   (a) Main line, 4-6-0 and 2-6-2 tender locos.
   (b) Shunting, 0-4-0 T.
   (c) Branch line, 2-car diesel train.

ENTRIES SHOULD BE POSTED IN SEPARATE ENVELOPES AND ADDRESSED TO "MODEL COMPETITION," C/o. TRACTION PUBLICATIONS, 29 SEYMOUR GROVE, BRIGHTON BEACH, S.5, VICTORIA.

Closing dates are: Australia—15th March; Overseas—15th May.

MAYFIELD LINES
2. Timetable Workings

To operate an extensive model railway, which owns a fair selection of rolling stock, is an extremely fascinating business, even if trains are not run to a set schedule, or to any pre-arranged plan. But, if time-table running be introduced,

B.P.R. announces:

NEW RANGE of BOGIES and AXLEGUARDS
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Bogies are listed in sets of four sideframes and two truck bolsters. Wheels are listed separately, so you may choose the type you prefer.

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Axleguard — V.R. "GZ" Type, 4 per set, (O) 2/6 set, (HO) 2/6 set; Archbar Truck Set, (O) 6/- set, (HO) ?? set; Four-wheel Passenger Truck Set — "NYC" Type (O) 7/6 set, (HO) 5/- set; Body Bolster, to mount trucks to car floor and set the car at correct height, (O) 8d. ea., (HO) 6d. ea.; Coil Spring for truck springing (1 spring equips one set of trucks), 3d. ea.; Data Sheet No. 2 — Details of how to spring trucks by the B.P.R. method, 1/3 ea.; Plastic Wheels — Disc Type, O Gauge ¾ in. and HO 10.5 mm. diameters, (O) 1/4 pr., (HO) 10d. pr.; Super Precision Brass Wheels (3 Rail) O Gauge, O Gauge, 11/16 in. and ¾ in., HO, 10.5 mm. diameters, (O) 2/3 pr., (HO) 2/- pr.

COMING SHORTLY.

Bettendorf Truck — O and HO.
Archbar Truck — HO.
Plastic Spoked Wheel — O Gauge, ¾ in. diameter.

B.P.R. parts are available at leading hobby shops in Melbourne, Sydney, Brisbane, Adelaide, Perth.

NMRA STANDARDS

Since the inception of the Model Railway section of this magazine we have referred to NMRA Standards in almost every paragraph.

Some readers may not be aware of what these standards consist; others may not be able to obtain particulars, although interested. On page 14 of this issue, a list is given of the more important standards for O and HO gauges.

It will be noted that curvature is not mentioned. This is no longer included in NMRA standards, but is covered in one of the Data Sheets, which are purely recommendations, and which are based on the experience of leading model railroaders in the NMRA. The recommendations are most comprehensive, ranging from tramways to standard mainline railroads.

May we emphasise that the best way to obtain all this valuable information is to join the NMRA itself. There is an Australian Area, whose representative is located in Brisbane (see Club Notice Board) and who will be delighted to receive genuine enquiries. A magazine is published for the information of members.

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interest is multiplied many times, and the pastime is immediately raised from "playing trains" to the work of operating a real railway in miniature. No enthusiast who has experienced a few hours of time-table working is prepared to revert to the former haphazard method of running trains, as it seems to lack interest and variety. Although it is feasible to plan a timetable for a continuous layout, it is far easier and more satisfactory if the line to be treated is a point-to-point one.

To complete the table, the first matter for decision is "time," as it is apparent that this will be the most important factor. It is, of course, possible to draw up a schedule of train movements to be carried out in a pre-determined order without any consideration for time, but the idea lacks realism, and, on that score, must be rejected.

What kind of time shall be used then? For several obvious reasons, real time is unsuitable; therefore, some other kind must be devised; call it scale time, model time, or whatever you will. An ordinary clock can be altered to go several times faster than normal speed by removing teeth from certain wheels. On the Mayfield Lines, an ordinary cheap alarm clock has been "fixed" to go six times faster than usual. Thus an hour by this clock is equivalent to only ten minutes' real time. By this means, it is possible to reproduce the activities of a railway day of, say, eighteen hours, commencing at 6 a.m. and finishing at midnight, in three hours' real time. Beginning at 6 a.m. (or any other selected time), workmen's trains may be run, gradually working up to the morning peak period, followed by the slack hours, when goods trains are in evidence. Then comes the intensive afternoon peak traffic, when all available engines and rolling-stock are pressed into and rolling stock are pressed into service. After this, follows the period for despatching the various night mails and expresses, with, perhaps, a few more goods thrown in, tapering off to the late suburban trips.

The basis of any timetable is the graph, which, of course, is drawn on squared paper, the station names being listed vertically and the times horizontally. For convenience, each vertical line should represent one minute (two minutes in real practice), and it will be necessary to have more than one sheet of graph to compile the full table. The next step is to ascertain and record, using the special clock, the time taken by all types of trains, slow, express, and goods, to travel between the various stations. Now comes the work of compiling the graph from which the station working timetables will be ultimately extracted. A small section of the graph covering the period 9.50 a.m.-10.20 a.m., Sunday, will be illustrated, from which it will be observed that the lines other than vertical and horizontal, represent the courses of trains. Those from top left to bottom right are "down" trains, which have odd numbers, while those from bottom left to top right are the "ups," which have even numbers, and, when working out the graph, it is important to ensure that the lines representing the up and down trains do not intersect except on double-line sections or at recognised crossing places.

SHOPPING AROUND

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Biggest news in Australian model railway manufacture recently is the appearance of semi-scale models of N.S.W.R. air-conditioned passenger cars and power-brake vans, as used on daylight express services in New South Wales. To ¼ in. scale, the 0 gauge models have been shortened slightly to enable them to operate on almost every layout. Cars can be purchased with or without trucks. Apparently because of production lags, early models have been supplied with non-scale trucks, but more recent cars have excellent reproductions by B.P.R. of the interesting high-speed N.S.W.R. trucks. A minor defect is the provision of eaves to car roofs — presumably to simplify manufacture. (At all model

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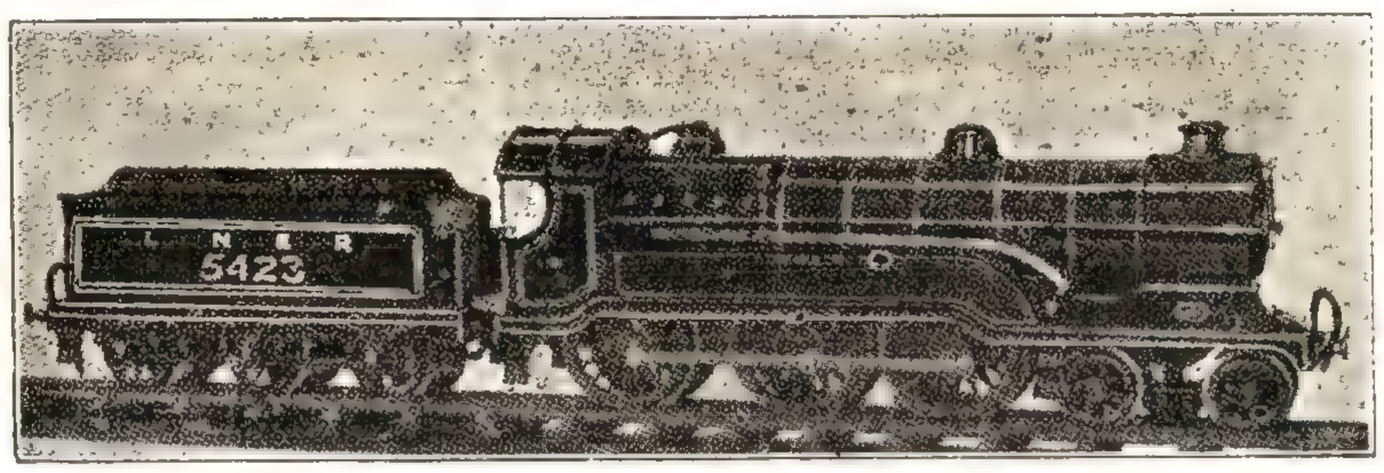

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Scale Locomotives

A few of the beautifully made Hobbyden ¼ in. scale 0-6-0 switches and 2-6-0 freight locos. are still obtainable, also mechanisms for these and V.R. A2 class 4-6-0's. Built to N.M.R.A. standards, these little fellows pack a punch.

PERSONAL

The vacancy in the position of Chief Civil Engineer of the New South Wales Railways, caused by the death of the late Major-General A. E. Fewtrell, has been filled by the appointment of Mr. Keith A. Fraser. Mr. Fraser formerly held the position of Deputy Civil Engineer of the N.S.W.R. until his recent appointment as Chief Engineer to the Transport and Highways Commission.

IRISH RAILWAY IN TROUBLE

The Great Northern Railway of Ireland is now in a most unenviable position. Unrestricted competition, principally from the road services of the Ulster Transport Authority, are crippling the Ulster section, and the Authority refuses to take the logical step of absorbing the G.N.R. All possible economies have been effected, and no further cuts in service, either passenger or goods, can be made without reducing revenue by more than the amount saved.

New Railcars.

The railway is far from moribund, however, and 20 fine new diesel railcars are being built. Two of these cars are combined with standard buffet cars to form a fast, attractive, three-car train; such trains are already proving popular in service between Belfast and Dublin. Total seating capacity of the train is 142, and top speed is 70 m.p.h. Two A.E.C. 125 h.p. 6-cylinder direct-injection compression-ignition oil engines are fitted to each car and are mounted under the floor . Compressed air is provided for gear engagement and preselection of gears.

tion of the car, and an important feature is that vicious starting is impossible, for the converter will permit only a smooth flow of power. When the car reaches the road speed appropriate to the throttle setting, an automatic lock-up clutch gives direct drive. When the car commences decelerating, the clutch is automatically disengaged. Should any defect arise in a motor alarm systems will shut down the particular unit, and the car can continue at reduced speed.

Air brakes are by the New York Air Brake Co., and are their H.S.C. type, with D22 control valve. The Budd disc brake is employed, there ng once disc per axle, and each has two shoes linked with asstos composition.

Interior Fittings.

As for interior appointments, uorescent lighting is used in the entre of the ceiling, and lens-type ncandescent reading lamps installed n the underside of the longitudinal ggage racks. At each end vestiis a toilet and washroom.

Performance

the basis of performance, car is superior to anything on s. Top speed on level track 85 m.p.h., and service brake apations give a retardation of 2.8 h. per second. An emergency can be made in 25 seconds 85 m.p.h.—a rate of 3.5 p.s. This is partly due to utomatic sanding which comes play. To eliminate wheel slip such severe braking, the Budd son is used to release and re- the brake on a locked wheel. ause of its high power/weight , the car can accelerate quickly m.p.h.p.s) and sustain high peeds on grades. In a roadworthy condition the car weights about 50 long tons.

Another feature of the car is that the power plants can readily be changed, in fact it is claimed that four men can replace a motor in an hour and a half.

First Outside U.S.A.

The cars purchased by the Commonwealth Railways are the first to be purchased by any railway outside the U.S.A., and will cost about £57,000 exclusive of freight.

LATE NEWS

S.A.R. To Buy V.R. Locos.?

Persistent reports that the South Australian Railways will buy steam locomotives of the Victorian Railways' N class (2-8-2) have been highlighted by the appearance of Nos. 461 and 465 at Mile End loco. sheds, in S.A.R. service. A total of ten locomotives has been mentioned and, as it is most unlikely that the V.R. could spare these machines, it is probable that North British will receive an order from the S.A.R.

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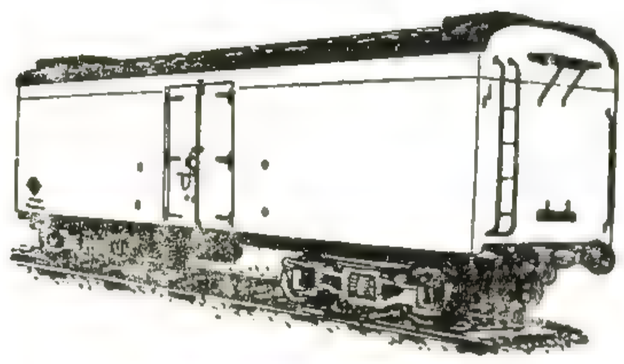

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From time to time we receive advice from the postal authorities of remittances from Great Britain, for which we receive no covering letter. In most cases to date, it has been possible to guess at the sender from the originating post office, but this is not always a good guide, and confusion has resulted.

Please write and advise us whenever you arrange for your subscription to be sent other than by direct mail or through an organisation with which we have special arrangements (e.g. Electric Railroaders' Association).

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Railways in Australia

The Magazine about Australian Trains

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Traction Publications,
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A LETTER FROM THE EDITOR

Dear Reader,

It has been a long time - longer than we care to think about - since we have been with you. As we mentioned in a recent circular, paper is desperately short in Melbourne, and our former printers had to give up the letterpress printing business, as far as regular work was concerned.

It has proved impossible to find another printer to accept the work at all, let alone on any regular basis.

Fortunately, we have located a firm which is prepared to do the job by the photo-offset method and the result is now before you. Whether it will be possible to continue on a regular basis is not in our power to say until we are able to consider time and expense factors in the light of experience. Whatever comes, we shall not let down our regular subscribers - as long as it is possible to do so, the magazine will be published in one form or another. It may become necessary to eliminate retail sales, which have always been unprofitable; in any case, if you can afford to take out a subscription, you will help us considerably by doing so, and thus help to keep the magazine going.

We hope you like the new presentation. While it does not permit quite so much reading (and every word has to be typed with our own editorial fingers!), we are able to give you much more pictorial fare. Many prints which have been held in our files - some for years - will now be used and we shall be glad of more. Please be sure that any prints sent are really sharp and clear. Faint or blurry prints just cannot be used.

Finally, just a word about letters. We like hearing from you, even when you criticise us, but do please remember that we do this when we should be gardening or taking the family to the movies! There is a limit to what any one person can do and we often reach it. So we definitely cannot entertain correspondence, except on business matters, and even these must wait, often weeks at a time.

Yours sincerely

Jack Robinson

MANAGING EDITOR

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Defends Railways

In 1950, N.S.W.R. freight cars spent 34% of their time transporting coal at less than cost, said the N.S.W. Transport Commissioner, Mr R. Winsor, in a recent radio talk. If a carriage of wheat, flour, crude oils, fruit, manures, hay, straw, chaff, meat, milk, and other items were added, the amount was almost 60%. The railways paid, not in cash, but in service to the public. Freight concessions on starving stock, fodder, and interstate drought relief were a dead loss to the railways, but of tremendous benefit to the nation. Millions of pounds being spent on motive power, rolling stock, duplication of tracks, and provision of coal handling facilities would not make money, but would give a national service.

Mr Winsor praised the honest road haulier for whom there was an important place in the transport set-up. No comparison could be made between a profit-making enterprise, such as that, however, and a national service where public interest was the main concern.

REALLY PERMANENT!

Owing to the high cost of imported materials, local products were used as far as possible in building the Mexican Gulf Railway. Nothing remarkable about this, perhaps, except that it resulted in the line having mahogany sleepers and white marble bridges. Another Mexican line had ebony sleepers and silver ore ballast.

ELECTRIC TRACTION

This magazine is now published separately this being necessary to avoid inconvenience to the Australian Electric Traction Association, in consequence of our late publication.

All regular subscribers to "Railways in Australia" will receive copies of the new mag while their subscriptions are current. Several issues have already been posted, and any subscriber who has not received issues to April should let us know.

NOT SOLD IN SHOPS

"Electric Traction" will not be available in retail shops. This is regretted, but is an absolute necessity for financial reasons.

FREE ISSUE

We had intended sending a copy of the 1st issue of "Electric Traction" with every copy of this issue of "Railways in Australia", but the new style of printing made this impossible.

Every new subscriber to "Electric Traction", therefore, will receive the January issue free, providing subscriptions are received before 15th June, 1951.

Subscription rates in Australia are 13/6d per annum, post free.

OMISSIONS

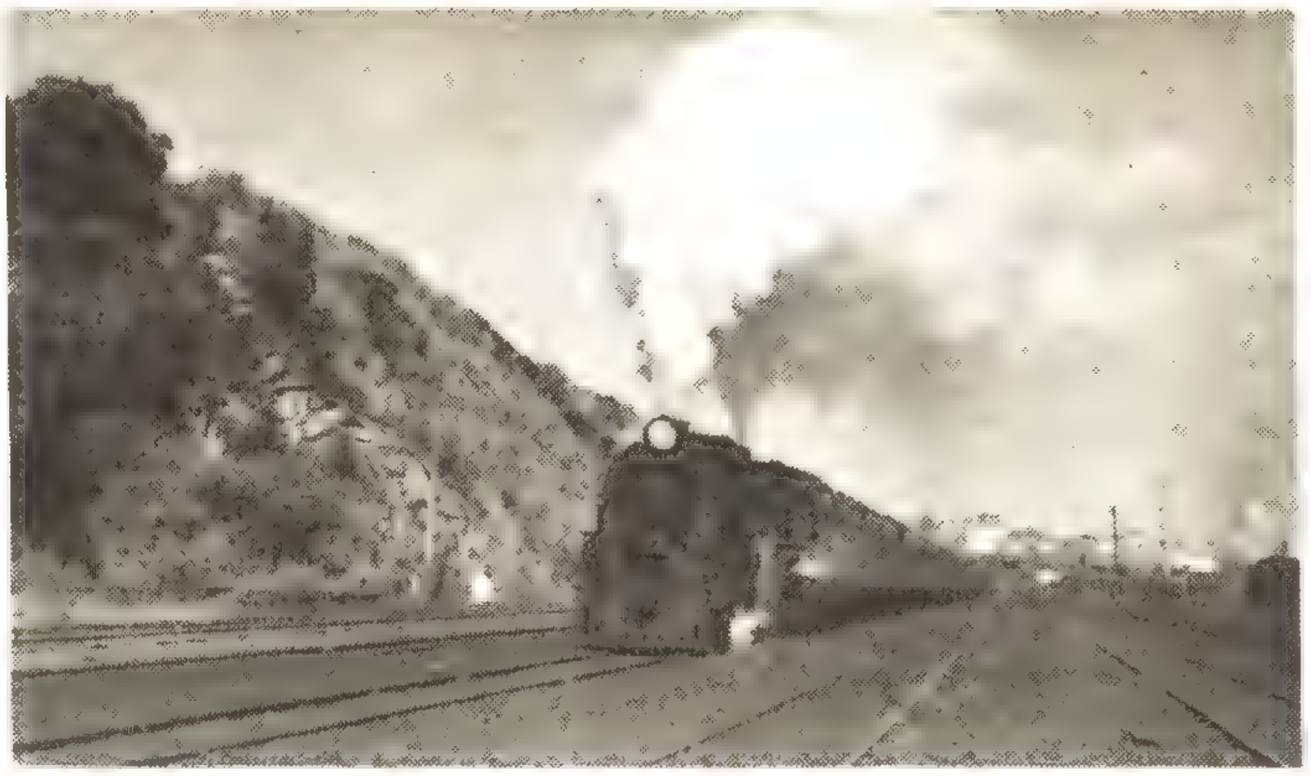
Due to lack of space, and other problems, it has been necessary to omit instalments of certain serial features, and to cut down many others. This will be remedied as far as possible in our next issue.

TO PRESERVE CONTINUITY, THIS ISSUE IS DATED "JANUARY" ALTHOUGH NOT PUBLISHED UNTIL MAY. DATES OF FUTURE ISSUES WILL BE DECIDED WHEN WE CAN BE SURE OF REGULAR PUBLICATION.

STUDY IN STEAM

The 9.08 a.m. Taneatua Express pulling out of Auckland, New Zealand, headed by K class 4-8-4, No. 910. 19 cars comprised this train when Mr W.W. Stewart photographed it on 1/3/47. The New Zealand Rail-ways use the 3ft.6in. gauge.

Electrification of the Auckland suburban area and of the main line as far as Frankton Junction is to be put in hand as soon as possible and should be completed by March, 1955, using 16000-volt alternating current.



Locomotive Imports

The successful negotiations, in which the Commonwealth of Australia was granted from the International Bank for Reconstruction and Development a loan of 100 million dollars for a term of 25 years, will have a beneficial effect on the state railway systems.

As railways play a vital role in the development of the Commonwealth, portion of the loan has been devoted to the purchase of rail equipment, including diesel-electric engines, and Budd diesel-hydraulic railcars, as well as components for the manufacture of diesels in this country. Also included is the purchase of U.S.Army 2-8-2's by the N.S.W.R.

KEMBLA'S NEW DIESEL-ELECTRIC LOCOMOTIVES

(Contributed)

According to the "B.H.P. Review" for December, 1950, the Australian Iron & Steel Co's first two diesel-electric locos, D1 and D2, in service for several months, have proved very successful. They are used principally on the five-mile A.I.& S. railway linking the Port Kembla steelworks with the recently mechanised Nebo Colliery, on which 107 lb. rails have replaced the much lighter rails formerly used. Coal is now hauled in 60-ton bogie hoppers in place of the former 7 to 12-ton wooden cars.

(This is the first use of road diesels on standard gauge in Australia and the first use of high-capacity hoppers in regular coal service. -Ed.).

The locomotives are capable of hauling 3000 tons on the level, and 1400 tons up a grade of 1 in 70 from a standing start. The normal load from the loading point at Nebo to Steelworks Coke Ovens is 930 tons gross. One engine makes three round trips in an eight-hour shift.

Dual controls, including an 8-notch master controller, are fitted on each side of the cab to enable "either-way" running to be performed with ease. Two "dead man's" pedals are fitted also, and one of these must be kept depressed whilst the loco is on the move. Starting current for the engine is provided by a 40-cell battery mounted in two boxes, one on either side of the locomotive.

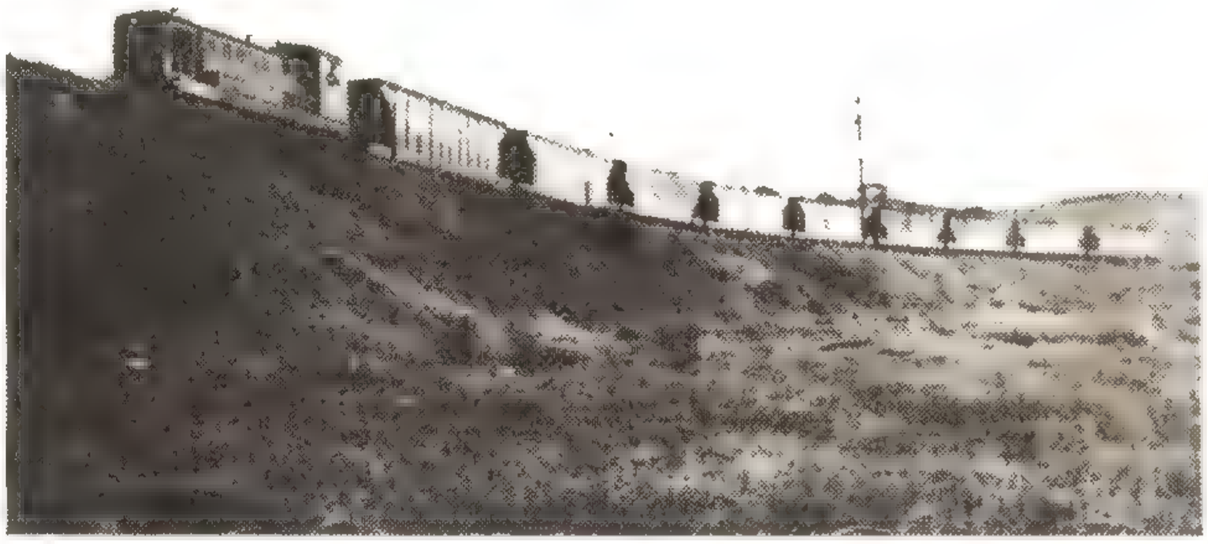
The following details, taken from the "B.H.P. Review", may be of interest to readers:-

Weight in running order	85 tons
Tractive effort (maximum)	57000 lbs
" " (1 hour)	33000 "
" " (continuous)	25000 "
Maximum speed	21 mph
Length over buffer beams	37ft.2¾in
" " coupling lines	41ft
Maximum width	9ft.3in
" height	14ft
Wheel diameter (new)	44in
Clearance to rail level	4¾in
Axle bearings	Journal type
Diesel engine (English Elec.)	800 h.p.SR KT
Generator	EE819 520kw
Traction motors (400v EE506)	4 x 135 h.p
Truck wheelbase	7ft.6in
Tank capacities - Fuel	600 gall
Water	100 gall
Lub. oil	82 gall
Sand	28cu.ft.

OIL HAULS COAL

A novel sight to Australian eyes is this string of 60-ton coal hoppers on a 1 in 75 grade along the Australian Iron & Steel Co's line from Mount Nebo Colliery to Port Kembla, N.S.W. No. D1, one of the new diesel-electric locomotives, was hauling 800 tons when reader J.L.N. Southern snapped her, on 25/5/50.

(Further pictures of operations on this line will appear in "Electric Traction" for May, 1951).



WHAT THE RAILWAYS ARE DOING

Rail News from all parts of Australia
(Contributions from readers are invited)

OWING TO THE LARGE BACK-LOG OF NEWS, NO ATTEMPT IS BEING MADE THIS MONTH TO MAKE OUR USUAL DISPLAY UNDER VARIOUS HEADINGS. SOME CUT-OF-DATE NEWS ITEMS ARE INCLUDED TO MAKE THE RECORD COMPLETE.

LOCOMOTIVE NEWS

New South Wales Railways

The 50 4-8-4-4-8-4 Beyer-Garratt engines now on order will be numbered 6001-6050 when placed in service, and will be known as the AD-60 class. Primarily intended for the coal service between Lithgow and Enfield, they may also be used on the Northern line.

Other engines on order include, as well as the 40 electric locomotives for the Lithgow electrification, the following:-

20 U.S. Army type 2-8-2's from the Baldwin Locomotive works. (The original decision not to purchase these machines, because of extensive alterations needed, was countermanded by the Minister for Transport, Mr Sheehan).
20 Alco-G.E. diesel-electric road engines.
10 Diesel-electric road engines (equipment by English Electric).
A number of diesel-electric shunters.

The Baldwin 2-8-2's, which will be the first engines of that wheel arrangement on the N.S.W.R., are part of an order originally placed by U.N.R.R.A., and are to the design of the S.N.C.F. (French National Railways) R class. Axle loads are 16½ tons.

World-wide tenders have been called for the supply of boilers of a new design, which includes a Belpaire firebox. They will be used to reboiler 35 and 36 class locomotives as present boilers fall due for renewal. This follows a decision to use a common boiler for both classes (4-6-0 passenger locos). The new boilers will provide 10% more power. Many modifications, including altered cabs, will be required, and the 35 class will be fitted with turret tenders similar to the 36 class.

Commonwealth Engineering Co. Ltd., Clyde, N.S.W., has commenced work on an order for 200 new tenders for the 32 class (4-6-0's).

The first 58 class 4-8-2 to work over the Northern line was No.5807, newly completed at Cardiff workshops, which came down in the early hours of 16/2/51. Special speed limits were imposed at stations and bridges, alterations to which are now in hand to permit 58 class engines to work regularly over this line. Largest freight engines at present used are the 55 class 2-8-0's.

New 4-8-2, No.5808, emerged from Eveleigh shops in February last.

Commonwealth Railways

In March of this year the first two Mikados of an order for ten were delivered from the builders, Clyde Engineering Co. for the 4ft.8½in. Trans-Australian line. These big 2-8-2's were originally ordered for use in China as part of an U.N.R.R.A. rehabilitation scheme, but the civil war there held up delivery. They were offered to the N.S.W.R., for whose loading gauge they were too large, however, and subsequently to the S.A.R., whose 700 class they strongly resemble. In this case gauge modification, and the decision to order diesel-electrics for heavy work, were against the waifs. Comrails will ultimately use them in Leigh Creek coal service when the Central Australian line is standard-gauged to that point. The new locos are classed L and carry road numbers 80-89.

Victorian Railways

As already announced, the new J class engines, designs for which are now almost completed, will be basically light-line versions of the K class 2-8-0's, adapted for ultimate conversion to standard gauge.

Better steaming should result from the wide firebox and its 31 sq.ft. of grate, compared with the 25¾ sq.ft. of the K. To permit the firebox to extend over the frames, the boiler centre-line is pitched at 9ft.2½in. above rail level, placing the top of the funnel at 13ft.11½in., an increase of 3½in. over the earlier design. The 1682 sq.ft. of heating space is comprised of firebox (118), arch tubing (9), tubes and flues (1317), and superheater elements (238). Boiler pressure is 175 lbs. per sq.in., and a departure from previous practice is the provision of two "Cole" type safety valves. Previously only heavy types, H S, and X were so fitted, lighter engines having Ramsbottom type valves, with the hand lever extension protruding into the cab.

Another innovation is the larger coal capacity of 7 tons, although the water capacity, 4200 gallons, remains the same. The tender is to have all-welded frame type trucks, as fitted to the post-war N class, with clasp brakes. A wheelbase of 5ft.4in. is standard, and trucks are at 10ft.6in. centres.

All current standard details are to be incorporated, such as fixed cab-roof ventilators, single-window cabs, and sheet steel cowcatchers. German State Railways type smoke deflectors, successfully used on the C class, are to be provided. To overcome the interference between the cross-compound compressor, and the right-hand deflector (so painfully obvious on N class No.430) the compressor is to be mounted halfway along the boiler barrel.

The 20"x 26" cylinders have been considerably redesigned to give a more efficient use of steam, requiring the engine wheelbase to be increased to 24ft.6in. Steam distribution will be by 10" piston valves actuated by Walschaert valve gear to give a maximum travel of 4 5/8" when adjusted by the screw hand reverse wheel Coupled wheel diameter is 55 3/16".

Use of an increased maximum axle loading of 14.50 tons has increased the adhesive tonnage to 57.35, compared with 54.75 tons for the K class. Weights in roadworthy condition are: engine 66.95 tons, tender 45.80 tons, total 112.75 tons.

As recorded earlier, an order was placed with the Vulcan Foundry Ltd., of Newton-le-Willows, Lancashire, England, for 50 of these locomotives. This has been increased to 60, following the sale of 10 N class engines to the S.A.R.

It is expected that construction will begin towards the latter part of this year. No number block has yet been allocated to the J class.

New N class locomotives were placed in service as follows:-

Ex Newport Shops	No.431,	10/10/50
Ex North British	No.454	9/10/50
	" 455	10/10/50
	" 456	17/1/51
	" 457	18/1/51
	" 462	19/1/51
	" 463	23/1/51
	" 464	11/12/50.

Y class loco No.406 was renumbered 104 on 15/12/50.

Locomotives scrapped recently include the following 4-6-0's: D1 No.572, D2 No.707, and A2's Nos.824 and 835. No.824 went on 8/12/50, the others on 13/1/51.

The first streamlined S class 4-6-2 converted to burn oil fuel is expected on the road shortly.

South Australian Railways

The ten N class light 2-8-2's bought from the Victorian Railways in new condition have been numbered 750-759, the first three being ex-V.R. Nos.461, 465, and 471, delivered in January and February of this year. In S.A.R. service, the buffers have been removed, but the circular buffer-plates remain, presenting an odd appearance. S.A.R. load limits for the 750 class are the same as for the 620 class, which are light 4-6-2's.

West Australian Government Railways

The W.A.G.R. have placed orders in Great Britain for 66 diesel locomotives, valued at £2,712,000.

48 diesel-electric locomotives for main-line work are to be built by Metropolitan Vickers, and 18 diesel-mechanical shunting locos by the British Thomson-Houston Co.Ltd.,Rugby. When these locomotives arrive, late in 1952, the W.A.G.R. will be the most highly-dieselised railway system in Australia.

Diesel Railcars

The new Budd diesel-hydraulic railcars for the Commonwealth Railways' East-West railway arrived recently from the United States. In a test run, one of the cars clipped 26 hours off the present Port Augusta-Kalgoorlie timetable which is 44 hours for the 1051 miles, according to the published announcement (41¾ hours in our copy of the timetable).

The new cars, which were described in previous issues of this magazine, will be used on the 135-mile run from Port Pirie, S.A., to Woomera Rocket Range, terminus of a line from Pimba on the East-West route.

THE "NORTHERN TABLELANDS" NOW AIRCONDITIONED

Commencing on Monday, 9th April,.the Northern Tablelands Express between Sydney and Armidale has been operated by air-conditioned car sets similar to those used on the Riverina Express, and described previously in this journal. This carries a stage further the Department's policy of providing the best possible accomodation on fast day trains throughout the state. Modern diesel-driven m.u. cars connect at Armidale for Glen Innes and Tenterfield. Service is daily except Sunday in both directions. The diesel train will also be used north of Armidale in place of the four-days-a-week Glen Innes Mail, with which it will make connection.

GENERAL NEWS

Tasmanian Railways

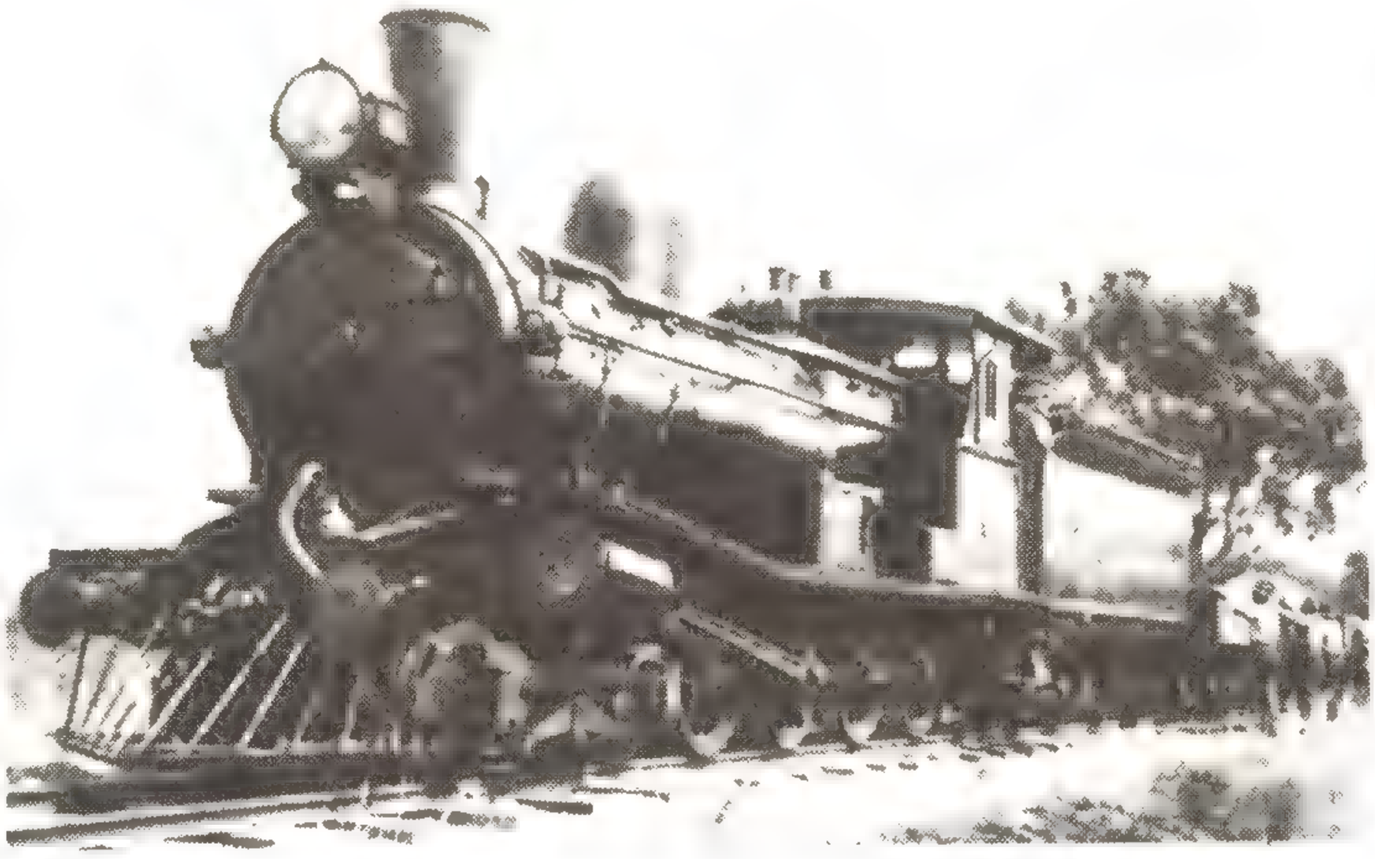
Rails have been lifted on the abandoned branch from Parattah, on the main line from Hobart to Launceston, to the nearby town of Oatlands. The line was opened in 1885,and was closed in 1949 because of losses. The rails were left in position because of a plan to establish new industries in Oatlands. So far.

(Continued on Page 7)

New South Wales Railways' FR class cars of the type in use on daylight express trains prior to the introduction of the air-conditioned sets.(See references in this issue).The FR's were converted in the 'thirties from FO compartment-type stock. The BR (1st class), and RBR (buffet) cars were similarly converted No.749 is the "terminal" car at one end of a 4 or 5-car set and has interconnecting doors at one end only (NSWR Official photograph).

STREAMLINED POWER

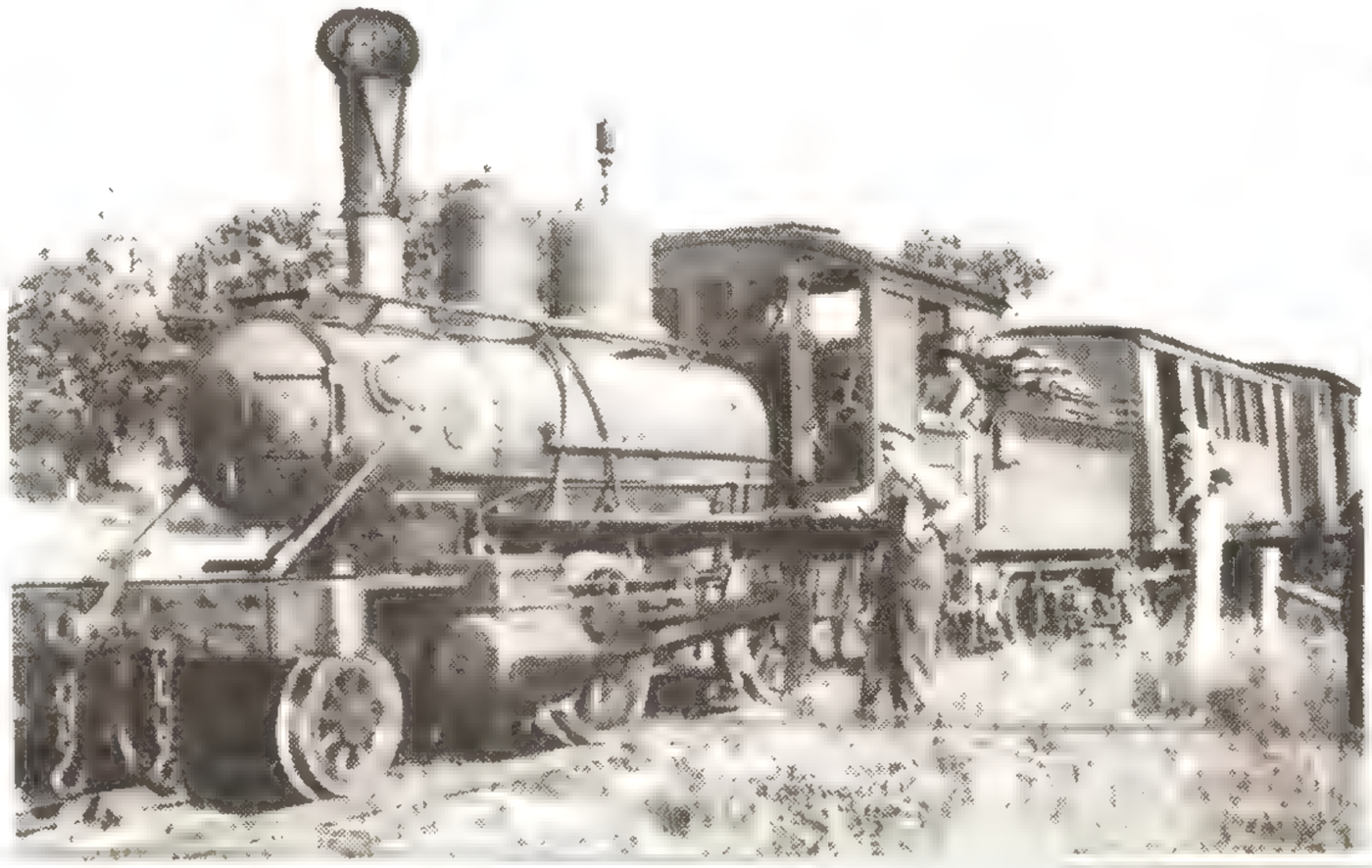
"Essington Lewis", No.523 of the South Australian Railways, a light-line, general purpose loco of impressively modern aspect, is one of seven 520-class, "Pocono"-type engines. Built for the 5'3" gauge, these machines total over 198 tons in working order, except when operating over 60lb rails, when less coal and water reduce the weight by 7 tons. Tractive effort at 85% boiler pressure is 32,600 lbs. Pressure is 215 lb. per sq.in., cylinder dimensions 20½"x28". Driving wheel diameter is 5'6"; overall length 87'4 ".
(S.A.R. Official Photo)



The T class 4-8-0's of the Tasmanian Govt. Railways total 6 in all. Obtained secondhand from the 3'6" section of the S.A.R. in 1921, they retain original numbers - 222-3, 219, 230, 235, 237. (T.G.R. locomotives are usually numbered within separate classes, commencing at 1). These locos were superheated in 1928-31, and leading dimensions are as follows:-
Cylinders - 16½" x 22"; dr. wheel diameter - 3'7"; boiler pressure - 175 lbs; tractive effort .... 18,950 lbs.
They formed part of the 'T' class on the SAR also.
(Photo by Mr Les Poole of No. 235, 1948).

LITTLE OLD BALDWIN

"Little Yarra", a 3ft. gauge 2-4-0, used to run on the tracks of the Victorian Hardwood Coy's Powelltown tramway, between Yarra Junction, on the Victorian Railways' Warburton branch, and Powelltown, a once-thriving timber centre. The bogie saloon car and the brake van, as well as a large number of 4-wheel bolster flats, and low-side gondolas, were constructed by the company at Powelltown. "Little Yarra", snapped by John Buckland in 1937, was a Baldwin product, built in 1912.
The line was abandoned and dismantled during the late war.



this has not eventuated.

Freight charges on both rail and road ser-vices have been increased by from 10 to 25% since 12th February last. Also increased were suburban passenger fares, being as much as 50% above previous levels in some cases. Country fares remain unaltered for single journeys, re-turn fares having been discontinued. Country bus fares have been increased also, on both government and private routes.

New South Wales Railways

The Dorrigo line was re-opened for traf-fic throughout from 12th January last, after having been completely closed for some time, as a result of flood damage. Partial re-open-ing as far as Megan was described in our last issue.

During the past twelve months, freight vehicles placed in service have included the following:- 63 G class 40-ton bogie coal hoppers, 1 MLV 24-ton express bogie louvre van, 5 28-ton MLV vans, 7 UME 41-ton flat cars, 7 LCH 4-wheel loco coal hoppers, 1 U 24-ton 4-wheel gondola, 2 LV 4-wheel louvre vans, 3 PHG bogie goods guard's vans, 5 GSV sheep vans, 26 K 25-ton 4-wheel gondolas, and a special-load vehicle, No.2200, class SL, of 100 tons cap-acity. In the same period, 5 freight vehicles were withdrawn.

Suggestions have been made in ministerial circles that large numbers of transport work-ers be brought out from Britain; included in this scheme would be 16000 for the N.S.W.R.

Twinette sleeping cars, recently added to the "Overland Express" (Adelaide-Melbourne), are planned for the N.S.W.R., biggest user of sleeping cars in Australia

The Brisbane and Brisbane Limited Express trains, via the North Coast, have been accel-erated as much as one hour in April timetable improvements, following reintroduction of 36 and 35 class locomotives on that route. Time-table improvements in the Newcastle suburban area include the provision of a fast train on the Toronto line in morning and evening peak-hours.

COALS TO NEWCASTLE!

Because local manufacturers are unable to cope with orders in hand, locomotive driving wheels are being landed at Newcastle, reports the Newcastle Morning Herald.

BALLOON RAILWAY!

Yes, it's true! Back in 1906 a German in Salzburg built a mountain railway worked by a balloon fastened to a slide running along a single steel rail fastened to the side of a steep mountain. Floating 35 ft. above the ground, the balloon carried a circular car, which accomodated 10 passengers. Hydrogen gas in the balloon hauled the car up, and to come down, the conductor ran water into the ballast tank. He had also a speed regulating device.

PERSONAL

N.S.W.R. MAN RETIRES

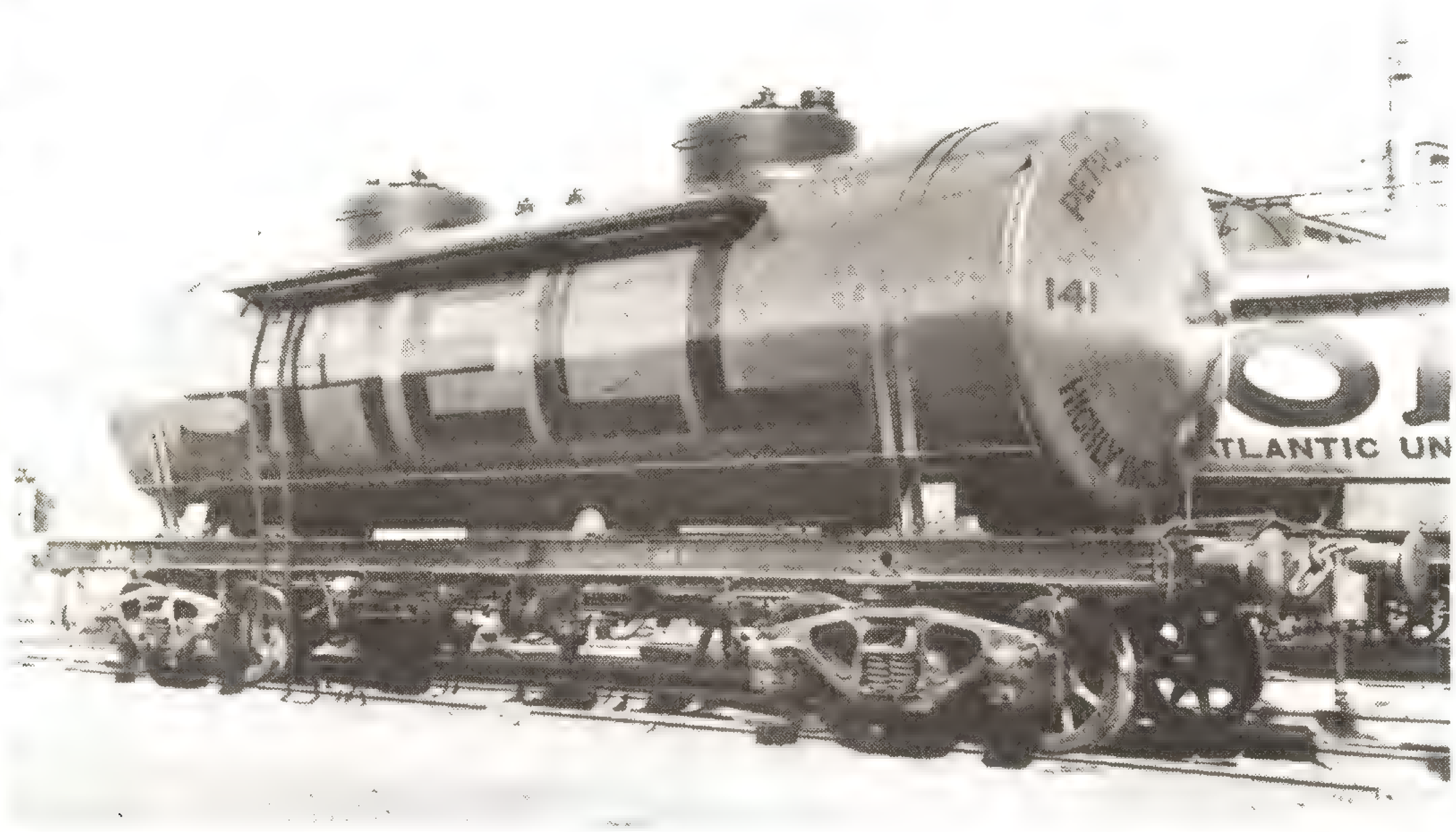
Mr L.T. Elsmore, Superintendent of the Illawarra District, N.S.W.R., retired in Jan-uary last. Until 1948, he had been Assistant Superintendent at Newcastle.

OBITUARY

Mr K.F. Elliott

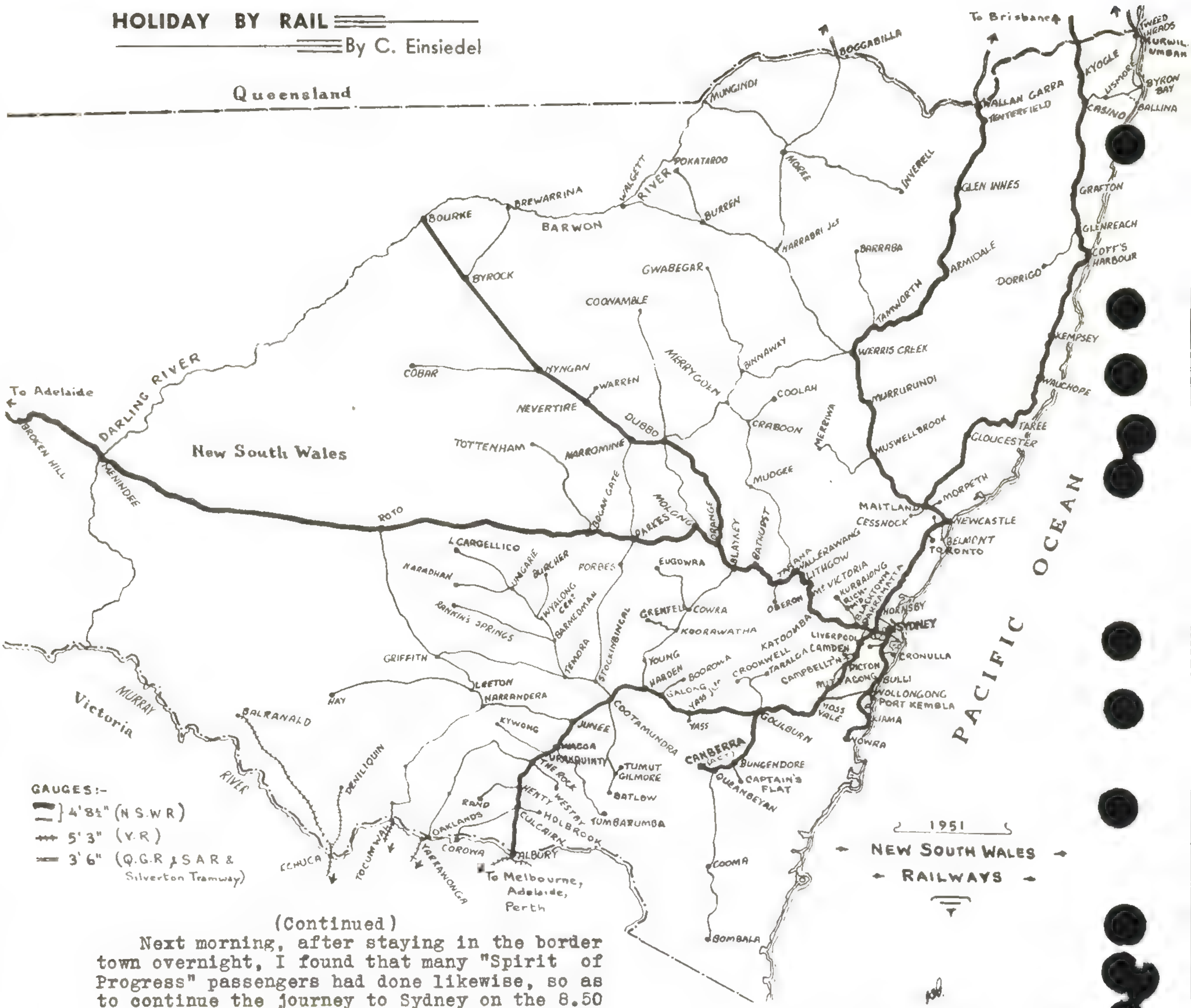
Members of the Australasian Railway & Lo-comotive Historical Society were saddened at the sudden death of the Treasurer of the Vic-torian Branch, Mr K.F. Elliott. In addition to his interest in full-size railways, Mr Elliott was a keen model railroader. He was liked and respected by all, and will be sadly missed in railfan circles.

This sturdy tank car, No.141 of the large fleet operated by the Shell Co. of Australia Ltd, runs on the 4ft.8½in. gauge lines of the New South Wales Railways. N.S.W.R. Bettendorf type trucks are fitted.
(Official N.S.W.R. photograph)



HOLIDAY BY RAIL

By C. Einsiedel



(Continued)

Next morning, after staying in the border town overnight, I found that many "Spirit of Progress" passengers had done likewise, so as to continue the journey to Sydney on the 8.50 a.m. Up "Riverina Express" which was covered in detail in the November, 1949, issue of this magazine.

I was at the station early to take stock of the transfer arrangements from the Down overnight expresses from Sydney. From seven to eight o'clock, the whole scene was a hive of activity with, in addition to the passengers, goods shunting going on, and workmen arriving from all directions to take part in the transfer of freight in the goods yard. I received the impression that the yearly payroll at Albury must represent a tidy sum.

My first view of a 38 class engine occurred when one came in on the dot at 7.01 a.m., at the head of the Down Melbourne Express, and what first drew my attention was what I afterwards found to be the audible effect of the pilot regulator valve. This is used in place of the by-pass valve, or "snifter" arrangement which I had been used to hearing in Victoria. Previously I had heard this soft, intermittent and diminishing exhaust as the train slows, only on the American films, but had never got around to thinking about the reason for it.

Later, when I had an opportunity of having a close-up of the left side of 3811 at the head of the 8.50 a.m., I was interested to see the regulator rod running through the running plate handrail, and disappearing into the front end of the boiler. Although I thought the safety valve sensitive, by the way it popped off, probably I don't know enough about such things. The class perhaps lacks the clean lines of the Victorian engines, but I soon found that they lacked nothing on the score of efficiency.

I much admired the new type of saloon cars with centre aisle and all seats facing in the direction of travel, and thought them ideal for daytime journeys. The train had been in service only a fortnight when I rode it, and possibly the booking arrangements had not settled down, as I found that the passengers going the longest distances had been allotted forward seats, where the vision was restricted by the proximity of the end of the car. However, I liked the public-address system, and thought that even more use could have

(Continued on Page 10)

OVERSEAS ITEMS

Through the courtesy of the United States Information Service, we are able to print this magnificent photograph of the Southern Pacific Railroad's "Shasta Daylight" which is in regular daily service on a 718-mile route between San Francisco, California, and Portland, Oregon. The train is passing Odell Lake in the Cascade Mountains of Southern Oregon. The "Shasta Daylight" is one of a series of fine day trains operated over several routes on this famous railroad.

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Interior of 2nd class air-conditioned car, New South Wales Railways. Seats are reversible, and very comfortable. Ceiling lights are fluorescent, and there are individual seat lights in the undersides of the luggage racks. (Official NSWR photo).

HOLIDAY BY RAIL

(Continued from Page 8)

been made of it. Criticisms in the daily papers suggest that passengers are subjected to a constant barrage. If the total duration of announcements during an eleven-hour journey ammounted to ten minutes, I should be surprised. Before each stop an announcement is made in the following strain: "Your attention please! The train is approaching Cootamundra Will all passengers wishing to alight there please be ready, with their luggage, as soon as the train stops." Before the loco stop at Demondrille Coal Stage, the reason for the halt is explained and a direction given that passengers must not leave the train as there is no platform. Just prior to arrival in Sydney, a reminder is given not to leave luggage, etc., in the racks or on the seats. Further announcements concern the buffet car and the non-smoking cars. (I thought that this struck a discordant note when a girl attendant came along with, amongst other things to sell in those cars - cigarettes!).

The new train was at first given 17 min. longer running time than the previous, lighter train but, after a little more than two months, this was restored to the original of 11 hours 3 minutes. It was apparent by the time Wagga was reached that the schedule was on the slack side, though not to the extent indicated later in the day. Arrival there was three minutes ahead of time, and a stop of 7 minutes gave a departure one minute early.

The 78 miles between Albury and Wagga include a straight run of 11 miles through Henty, the longest on the Main South Line, and generally the short lifts of 1 in 80 present no difficulty as far as Uranquinty. After this, three miles of 1 in 80, 1 in 132, and 1 in 66 steady stopping trains there. The rest of the run to Sydney is practically all curves and grades, emphasizing the hilly nature of the country. This I found to be the case over nearly all of eastern N.S.W. The only straights of note after Wagga are 3½ miles through Harefield, 3 miles on the Down side of Bethungra, and just under 5 miles Up from Breadalbane. Running was easy on to Junee where engine requirements were attended to during the 9¼ min. stop.

THE BETHUNGRA LOOP

Up the wonderful piece of work which is the Bethungra Spiral Loop, speed did not fall below 28 m.p.h. This job, completed in 1946, in conjunction with the duplication between Cootamundra and Junee, enabled the 57 class 4-8-2's to work right through to the latter depot. The original line, with curves down to 20 chains radius, and an average up grade for three miles of 1 in 47 against Up trains is now used for Down traffic only, while the new Up line, nearly 1¼ miles longer, has nothing steeper than 1 in 66. The duplication also eased grades and eliminated sharp curvature against Up trains a few miles further on, past Frampton.

(To be continued)

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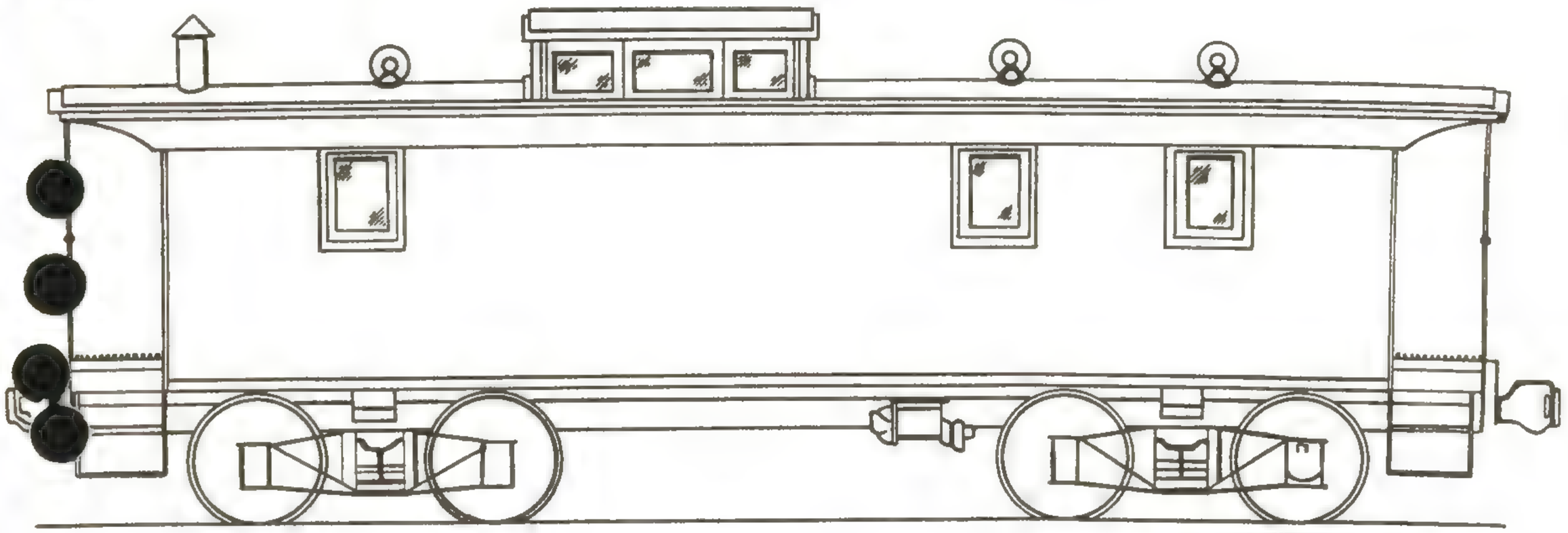
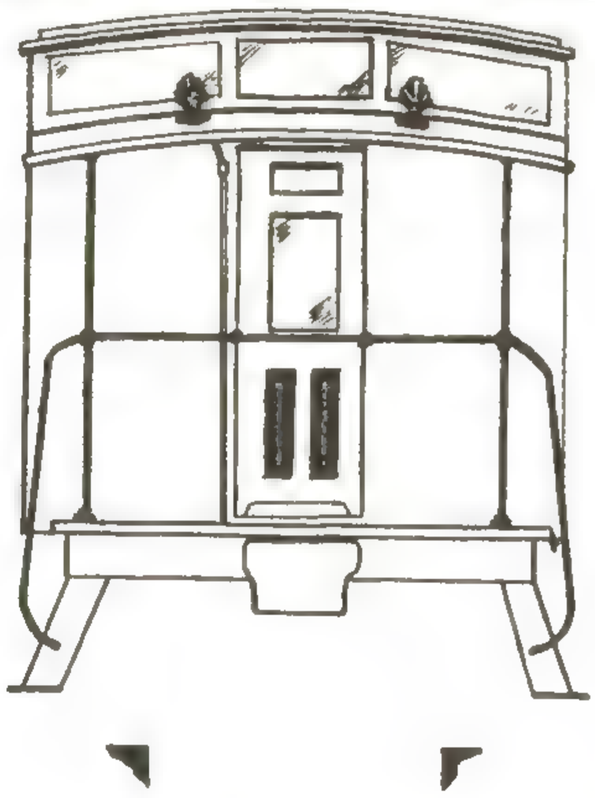
ROLLING STOCK PLANS

Continuing our series of Australian rolling stock diagrams, we offer this month an American type caboose used extensively by the S.A.R.

Future plans will include cars from other systems.





S.A.R. CABOOSE-TYPE FREIGHT BRAKE VAN

— 5' 3" Gauge —— Archbar trucks —

RM/003 Colour: Battleship Grey SCALE: ⅛" = 1'

A frequent sight on the South Australian Railways, these American-style cabooses were introduced in the 'twenties, during the Webb rehabilitation

(The scale used was not intentional, but was a result of the reducing process now used in printing this magazine - the drawing was made some time ago).

TO HANDLE WHITEMETAL CASTINGS

By K.N. Lowry

This month the Editor is allowing me to Tal Shop. However, a mere sales plug for my wares is not the purpose of this article.

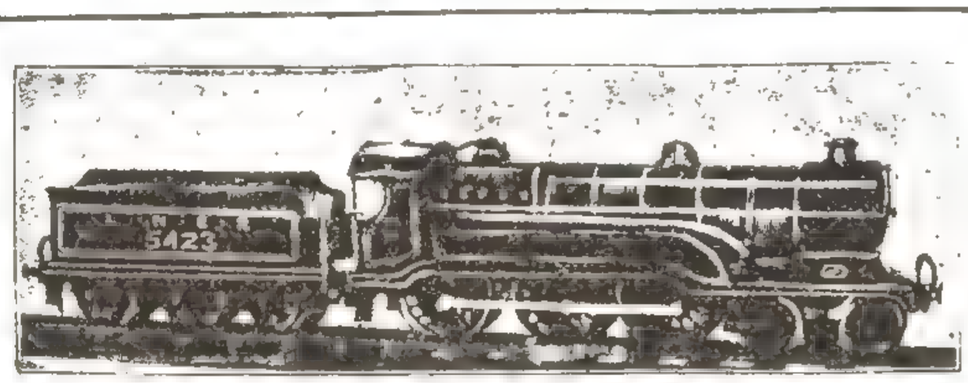
Modellers often write to me about problems they strike when using the various castin that I produce. As I am unable to have a y with every potential user of castings, it seems that an article covering these problems would help to make things easier. The hints apply also to any item processed from lead alloys, so that those who do not use my parts will nevertheless find useful information.

SOLDERING

ead-base alloys can be soldered, but it sh d be kept in mind that solder itself is a le alloy, with a melting-point not much lower than whitemetal. So, leaning the iron on the casting while you listen to what wins the 1.30 Handicap is not recommended.

The idea is to work fast, with a hot iron s in any soldering, the iron should be clean d properly tinned, the work clean and suitly fluxed. An important thing to remember the casting is to be joined to another of higher melting point, such as brass, tinplate, bronze, etc., is to apply the iron to the other metal rather than to the casting To illustrate: a bronze wire spring is to be soldered to the shank of a solid knuckle coupler, to make the latter automatic.

(To be continued)



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THE MODEL DOCKYARD
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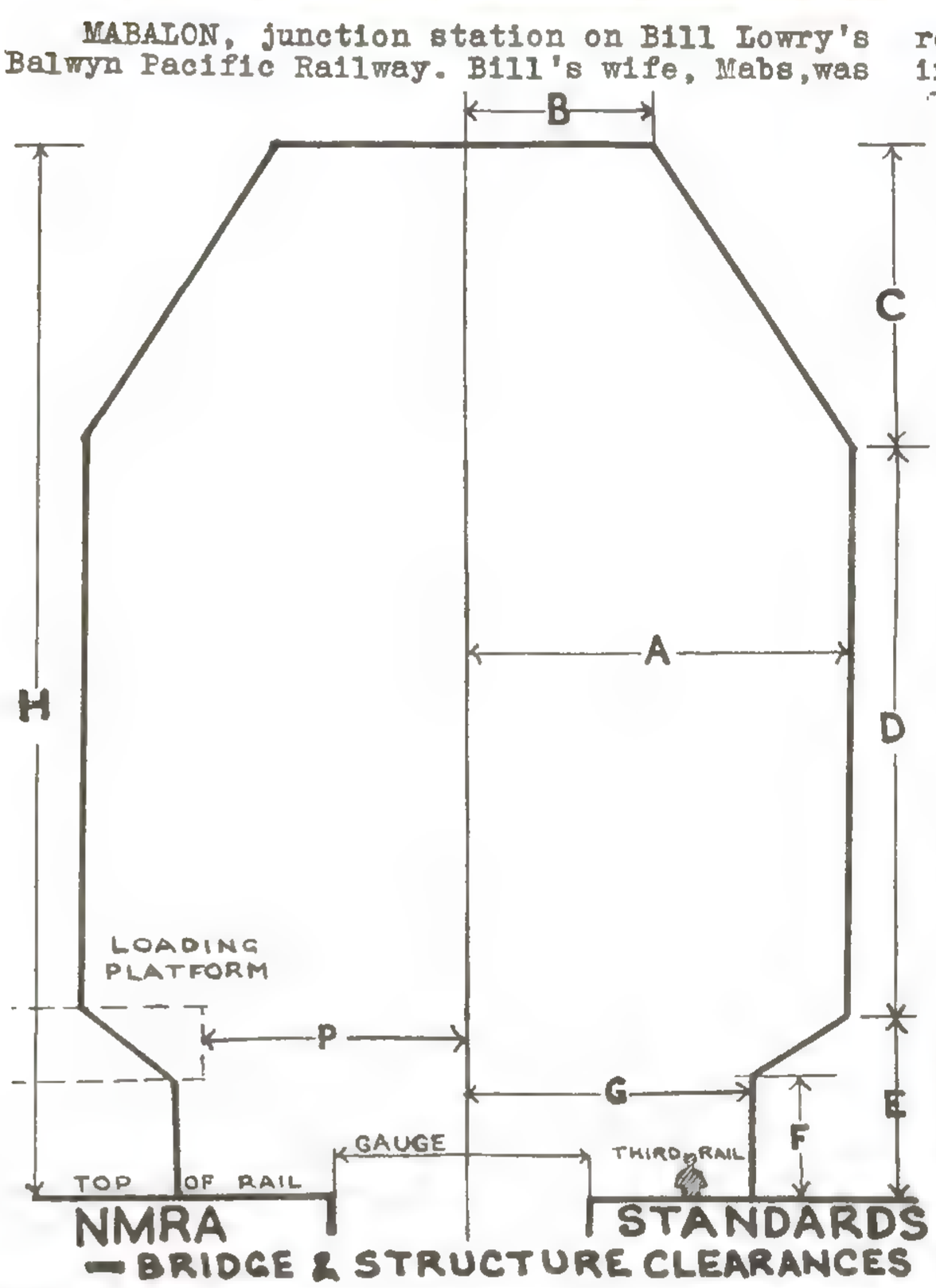
MABALON, junction station on Bill Lowry's Balwyn Pacific Railway. Bill's wife, Mabs, was responsible for the typically Victorian scene in the background. (Photo by Des. Ramsay)



— BRIDGE & STRUCTURE CLEARANCES

KEY TO BRIDGE & STRUCTURE CLEARANCE DIAGRAM

	A	B	C	D	E	F	G	H	P
O	2"	1"	1½"	3"	1"	⅝"	1 9/16"	5½"	1⅜"
HO	1"	½"	5/16"	1⅝"	9/16"	5/16"	⅞"	3"	¾"

Note:- On curved track, increase A, B, G, & P, as required by tables of minimum track centres (to be given next month).

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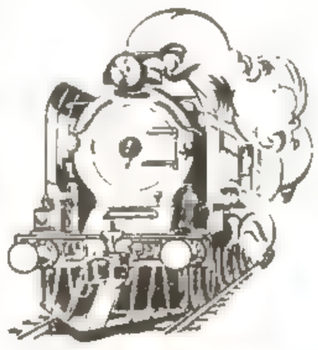

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BETTENDORF TRUCK SET	6/-	5/-
N.S.W.R. "Riverina" 4-wheel PASS.TRUCK SET	7/6	-
BODY BOLSTER	9d	6d
COIL SPRING (1 spring equips 1 truck set)	3d	
WHEELS - Plastic, pair	1/4	10d
do (spoked)	1/4	-
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John C. Beckett
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S gauge AMERICAN FLYER, in as-new condition took the eye at the Model Dockyard.

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Live Steam

HALE'S CREEK R.R. is a 6in gauge line at East Burwood - an outer suburb of Melbourne, Vic. The two locos include No.9846, an 0-4-0 switcher, and No. 6146, a 4-8-2. The latter figured in a 10-mile nonstop night run. Absent from the gallery is No.1483(4-6-2)

with which the road commenced operations. We plan to describe this interesting line in an early issue.

Largest gauge on a miniature railway in this country is 12", used by Captain James at Beaumaris, Vic. The loco is a replica of the "Old A" class 4-4-0 of the Victorian Railways

Club Notice Board

[illegible]way, Tramway, Engineering, [illegible]bs and associations are in[illegible]to use this space free of charge t[illegible]dvertise meetings and other [illegible] Matter for inclusion in this s[illegible]n should reach the editor not later than the 15th day of the preceding month.

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those int[illegible]d in tramways, trolleybuses and e[illegible]ailways. Regular monthly meetin[illegible]e held.—

MELBOURNE: Railway Institute, first Friday in each month at 8 p.m. Secretary: C. L. Busch, 2 Derby St., Moonee Ponds, W.4. Phone: FU7190.

SYDNEY: Trades Hall, third Friday in each month, at 8 p.m. Secretary: G. L. Johnson, 56 Stuart St., Longueville

[illegible]VICTORIAN MODEL RAILWAY S[illegible] meets at 8 o'clock on the third W[illegible]day of each month at its Headqu[illegible] in Siddeley Street, between Sp[illegible] Street Bridge and Flinders Street Extension. Visitors welcome. Secretary: J. H. Hooker, 6 Huntingtower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, 22 Whish Street, WINDSOR, Q'ld.

ADELAIDE MODEL RAILROADERS me[illegible]ery Tuesday night at 8.00 p.m., th[illegible]ing place alternating between the [illegible]C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: I. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

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Interstate visitors given warm welcome

Secretary: R. R. Steward, same address

THE AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY meets regularly as follows:—

SYDNEY BRANCH: Railway Institute, Devonshire Street, Second Tuesday in each month. Secretary: H. H. Matthews, 27 Ross St., PARRAMATTA, N.S.W.

MELBOURNE BRANCH: Railway Institute, Flinders Street, Fourth Thursday in each month. Secretary: R. B. McMillan, 15 Mercer Rd., MALVERN, S.E.3.

QUEENSLAND SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings every month: contact the Secretary, Mr. C. H. Garner, Gray's Rd., GAYTHORNE. Model Railway Section with operating O gauge, and HO under construction, meets first and third Mondays; contact the Secretary, Mr. C. Harrison (B3508), or the Public Relations Officer, Mr. C. McTaggart, 101 Laura Street, TARRAGINDI.

Letters to the Editor

Correspondence is invited from readers on railway matters. Letters should be as brief as possible, consistent with clarity, and should bear the name and address of the writer, not necessarily for publication. "Railways in Australia" cannot guarantee to publish all or any letters received.

The Editor,
Railways in Australia,
Dear Sir,

In reply to Mr Roger Boland (R.in A.12/50),there are facts about diesels which Mr Boland apparently cannot understand. Diesel traction in the U.S.A. is far from "ridiculous" and not so costly as is generally imagined.

In only 17 years, the diesel-electric loco has become the principal motive power on many railroads. In 1950, official figures showed that diesel-electric power handled 50% of passenger traffic, 50% of yard work, and 40% of through freight; it was responsible for all schedules averaging over 72 m.p.h. The Burlington Route (almost completely dieselised) leads the list with 20 runs daily (1394 miles) timed at 75 m.p.h. and over, including the world's fastest schedule - due to diesel traction - of an average of 86.2 m.p.h.

The "Denver Zephyr" (Burlington), and the competing "City of Denver" (Union Pacific) between Denver and Chicago, are worked night after night, one day westbound, the next east, by the same locos, entailing weekly mileages of 7343, at an average speed of 65.2 mph with 18 stops, and 7259, at 64.5 mph with 14 stops.

The high efficiency of the diesel engine uses a full 1/3 or even more of the heat value in its fuel, while the conventional steam loco is about 7% efficient. Condensing steam engines, steam-turbine power plants, etc., average 23%,some reach 30%.

The rising cost of good firing coal, and industrial trouble on the coalfields, resulting in lack of coal stocks are fast reducing the lead held by coal as the most economical fuel. The conversion of the S300 class locos by the Victorian Railways to oil fuel supports this claim.

In actual operation, oil fuel savings almost draw level with the cheaper initial cost of coal. A steam engine burns fuel so long as there is a fire under its boiler, and it may be required to keep up steam while standing idle for long periods. Under such conditions the diesel burns no fuel, as its engines can be shut off and restarted when needed. In yard work, at least, diesels are most economical and efficient.

Current orders by major railroads in the U.S. are for diesel rather than steam locos, in the ratio of 7 to 1. Unless this trend is arrested as a result of experiments now being conducted with steam and gas turbine locomotives, diesels are going to dominate railroad motive power. At the rate at which they are now being purchased, they may dominate the rails before the full possibilities of the turbine locos can be determined.

Recently ten Class I U.S. railroads asked the Electromotive Division of General Motors to co-operate in studies of 100% dieselisation of their systems.

On the Southern Railway - third largest railroad in eastern U.S.A., and largest user of diesel power in that area - with only 1/9th approximately of its motive power dieselised in 1947, had 32% of yard duty, 16½% of its gross ton-miles of freight, and 23% of passenger car miles handled by diesel power. The Southern gets more service, proportionately,from its diesels because they have high availability.

Most steam locos run only the length of a division,sometimes 200 miles - often much less (e.g. Sydney to Goulburn) on a single trip.Before making a return they must spend hours in the yards - ashes have to be dumped, grates cleaned,coal and water replenished, and new fires built. The diesel,on the other hand, can run for days with only simple checks on mechanical condition, and brief stops for filling fuel tanks.

On the Southern's 1086-mile freight run from St Louis to New Orleans via Louisville, a single 3-unit diesel has replaced eight steam locos which running in relays, were formerly required

Diesels also have the advantage of faster acceleration from low speeds, because full power can be applied to their drivers almost as soon as they begin to move.

Additional braking power may be applied on long down grades by changing the traction motors into generators at the flick of a switch.

The diesel's greater initial tractive effort than a comparable steam loco, and its smooth, even power, are leading factors in passenger comfort on overnight trains, and in freight handling. As slack does not have to be taken in a train, damage claims are reduced considerably.

There is no rail pounding, owing to the absence of driving and connecting rods, and the elimination of this hammer blow on the rails reduces considerably permanent way maintenance costs.

Loco crews are well provided for, driver and fireman riding in comfortable leather armchairs, confronted by the huge forward windows which give perfect vision. Engine noise does not interfere with conversation any more than does a steam locomotive.

The smooth lines of the diesel, the rhythm of clicking rail joints, and the gentle sidesway of the cab are taking the place of the steam locomotive with its appearance of great weight and bulk, its immense driving wheels and rods in violent yet ordered motion, its streaming plume of smoke, and its shattering symphony of steel and steam, a dramatic machine beloved of many, some of whom sorrow at its retreat before the sleek impersonality of the diesel.

Yours, etc.,
JIM ROWE
Parramatta, N.S.W.

EDITOR'S NOTE: While Mr Rowe's letter will undoubtedly bring snorts of disgust from the steam enthusiast most of his statements are undeniable. He does, however, as is so often the case, cheat a little by comparing brand new diesels with old steam locos. Modern steam locos compare more favourably with the interloper than did the old-timers which the diesels usually replace. Runs of 1000 miles are not unknown - even in Australia we can chalk up 400 mile workings Also, it is not correct to say that a 3-unit diesel replaced 8 steam locos; the latter were back on the road on other jobs while the train was still on the way. Major U.S. railroads seeking 100% dieselisation often do so because they find it uneconomical to maintain separate facilities for steam en-

gines when much of the line is dieselised - hence the recent withdrawal of even more modern steam locos.

It is quite incorrect to say that the V.R. S class conversions to oil burning are being prompted by considerations of economy; actually oil is proving very costly and would not be used but for the uncertainty of interstate coal supplies).

UNDISPUTABLY SUPREME!

Diesels have chalked up an undisputable success in railcar operation. Mr A.W. Moloney photographed this one on the NSWR last year.

The Editor,
Railways in Australia,
Dear Sir,

Replying to your letter, accompanied by communication from one of your correspondents in relation to the adoption by these railways of diesel-electric locomotives for our Hills line traffic, and referred to on page 2 of your August/September issue of "Railways in Australia", I am directed by the Railways Commissioner to inform you that the letter received by you has been noted, but it is apparent that your correspondent is not in possession of the full facts of the operating conditions, or the reasons for the utilisation of diesel-electric locomotives on the South Australian Railways. We are fully aware of the operating conditions of steam locomotives of the Norfolk & Western Railway Company in USA referred to by your correspondent.

Unfortunately, the information published in your journal, which has apparently been taken from the August/September issue of our Railways Institute Journal, is not complete, and may have given your correspondent a wrong impression of the reasons for the adoption of the diesel-electric locomotives in this state.

Yours, etc.,
P.F. CHERRY,
Secretary
Adelaide, S.A.

EDITOR'S NOTE: As Mr Cherry does not say what are the full facts of the operating conditions, we can only assume that the lack of good loco coal in South Australia, and the possibilities of regenerative braking on the Hills section were factors in the case).

Our Fan Mail

PLEASE NOTE THAT WE ARE UNABLE TO REPLY TO READERS DIRECT BY POST, EXCEPT WHERE BUSINESS MATTERS ARE CONCERNED

THIS MAGAZINE IS ENTIRELY A SPARE-TIME SHOW, AND OCCUPIES ALL OUR LEISURE MOMENTS.

WE DO LIKE TO HEAR FROM YOU, HOWEVER, AND TO HAVE YOUR COMMENTS - FAVOURABLE OR NOT - ON THE MAGAZINE.

M.DIXON, East Maitland, N.S.W. Thanks; I hope to do better with the model section when space is available.

R. WIMBURY, Birmingham, England Extra copy sent as asked.

V. HAYES, Northgate, Q'ld. - News items most welcome.

I.PERMAN, Marlow, England - Have written to Mr Stewart.

D.B. PARSONS, Camberwell, Vic. New address noted.

L.F. HOLMES, Seymour, Vic. - Will announce loco book when sure of date. Remarks re E.T. noted.

M. KEENAN, Peakhurst, N.S.W. - Your subscription has some months to run yet.

L. WADESON, Frankston, Vic. - New address noted.

K. FAWCETT, Bondi, N.S.W. - December issue sent. Current issue explains itself.

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Question Box

AS OUR "QUESTION BOX" EDITOR IS UNAVOIDABLY ABSENT FOR SOME MONTHS, THERE WILL BE A DELAY IN SUPPLYING SOME ANSWERS.

PLEASE NOTE THAT WE ARE NOT ABLE TO REPLY DIRECT UNDER ANY CIRCUMSTANCES.

Mr J.Goodman, of Parkville, Vic. asks when the V.R. Aa class locos were scrapped.

ANSWER: Most were scrapped in 1925-27, although four survived until 1932. Their dimensions might suggest that they could have been made very suitable for a number of short fast services still worked by steam, but there comes a time when increased maintenance, due to advancing age, make it uneconomical to keep a class in service. This time comes sooner for some classes than for others, due, generally, to peculiarities of design, and it apparently arrived early for the Aa class.

Mr Goodman asks also for details of the private line from Mittagong to Joadja Creek N.S.W.

ANSWER: The Joadja Creek Railway was operated by the Australian Kerosene, Oil & Mineral Co.Ltd. to transport shale from mines in the Joadja Creek valley, about 16 miles west of Mittagong, to the Government railway at that point. The first part of the line to be opened was from the top of an incline out of the valley to a road about 7 miles from Mittagong, in 1879. After legislative sanction had been obtained in 1880, the line was completed into Mittagong. The market for the company's products collapsed during the '90s operations being only intermittent until 1906 when the Co went into voluntary liquid

went into voluntary liquidation. The line was pulled up almost immediately afterwards.

went into voluntary liquidation. The line was pulled up almost immediately afterwards.

The gauge was 3ft.6in., and it is believed that 5 locos were owned by the company --- 0-6-0 tank engines by Andrew Barclay & Co., Glasgow.

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Vol.I, No.1, July 1948 issue of RAILWAYS IN AUSTRALIA. Write K. Fawcett, 63 Penkivil Street BONDI, N.S.W.

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SYDNEY: Secretary Sydney Branch, 22 Cove St., BIRCHGROVE
WELLINGTON: Mr. A. C. Bellamy, 46 Glenmore Rd., Wellington, N.Z.
THE MELBOURNE BRANCH meets on the first Friday of each month at 8 p.m. in Room 10, Victorian Railways Institute, 3rd Floor, Flinders Street Station.
THE SYDNEY BRANCH meets on the third Friday of each month at 8 p.m. in Room 26, Trades Hall, Goulburn Street.
VISITORS ARE ALWAYS WELCOME.

51-02

RAILWAYS IN AUSTRALIA

1/3 MONTHLY

The Magazine about Australian Trains

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Across the Border

Ten 2-8-2 freight locomotives originally ordered by the Victorian Railways have been acquired by the South Australian Railways, on which system they are now in service as the 750 class, numbered 750-759. Our illustration, reproduced by courtesy of the S.A.R. Institute Magazine, shows No. 750 at Mile End, S.A. Built by the North British Locomotive Company, these engines scale 124 tons 13 cwt. in working order, and measure 67 ft. 4⅞ in. over coupling points. Six tons of coal and 4,700 gallons of water are carried. Diameter of coupled wheels is 4 ft. 7-3/16 in., of cylinders 20 in. by 26 in. stroke, and boiler pressure is 175 lb. per sq. in. Grate area is 31 sq. ft. Westinghouse A6ET brake equipment, Waugh-type rocker grates, and Nathan mechanical lubricators are among fittings provided. Engines in service and on order for the V.R., on which they are known as the N class, are identical except for minor fittings, such as side buffers. It will be noticed in the illustration that the V.R. class and number plates on the buffer beam have been blanked out.

Taken in 1938, this picture is not new, but the Down Western Freight, hauled by New South Wales Railways' 57 class 4-8-2, No. 5704, is still typical of traffic across the Blue Mountains. John Buckland snapped the train near Glenbrook, N.S.W., and we are able to reproduce his work by courtesy of "Truck and Bus Transportation."

A Word From Your Editor—

Dear Reader,

You will, doubtless, be as disappointed as I am that the process used in the last issue could not be continued. An incorrect estimate by the firm concerned resulted in our receiving a bill three times as great as that expected. This has been straightened out satisfactorily, but future issues by the photo-offset process are out of question for the time being.

Fortunately, our good friends, the Middle Brighton Printery, have been able to obtain stocks of suitable paper, and the next two issues, at least, are assured. This one is a little later than had been hoped, as it was started on the assumption that the photo-offset process would be used, and had to be rearranged when this became impossible.

I have dated it February-March, and this practice will be continued until schedule is regained.

Thanks for all your very kind letters. I shall continue to do the best possible for you all. Inflation is a very real worry, but not insuperable.

More and more subscriptions are the answer, so do encourage your friends to subscribe direct, both for "Railways in Australia" and "Electric Traction."—Yours sincerely,

THE EDITOR

COMMONWEALTH RAILWAYS
A Brief Review

The new Budd diesel railcars, the successful operation of which is described in this issue, are but one symptom of the sweeping change which is coming over the operations of the Commonwealth Railways. This organisation was set up originally to operate primarily passenger service over the standard gauge East-West transcontinental line built during World War I for strategic reasons and to help cement the bonds of the young Commonwealth. Previously the only communication between the eastern States and West Australia was by sea, and this medium handled all but a small amount of the freight traffic after the line was built. Actual freight trains on the East-West line were not frequent, although the railways' own requirements led to a good deal of traffic and heavy freight locomotives were unknown. World War II and its aftermath have changed all this. In addition to greatly increased through freight traffic, there is the new branch from Pimba to the Rocket Range. A new standard-gauge line is to be built to serve the Leigh Creek coalfields in South Australia and short branches to power stations near Port Augusta have been or are being built. There is every chance that Comrails will become primarily a heavy freight hauler instead of being mainly a passenger-moving line, and this tendency will be accentuated when the standard gauge line from Kalgoorlie (present western terminus) to the sea coast at Fremantle becomes a reality. Another new feature of quite a different kind is the local passenger service now being provided at the

(Continued on page 8)

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HOLIDAY BY RAIL

In this instalment of his interesting tale of travel on the New South Wales Railways, Mr. C. Einsiedel takes us to and around Sydney. The accompanying map was drawn by Mr. N. J. Thorpe.

(Continued)

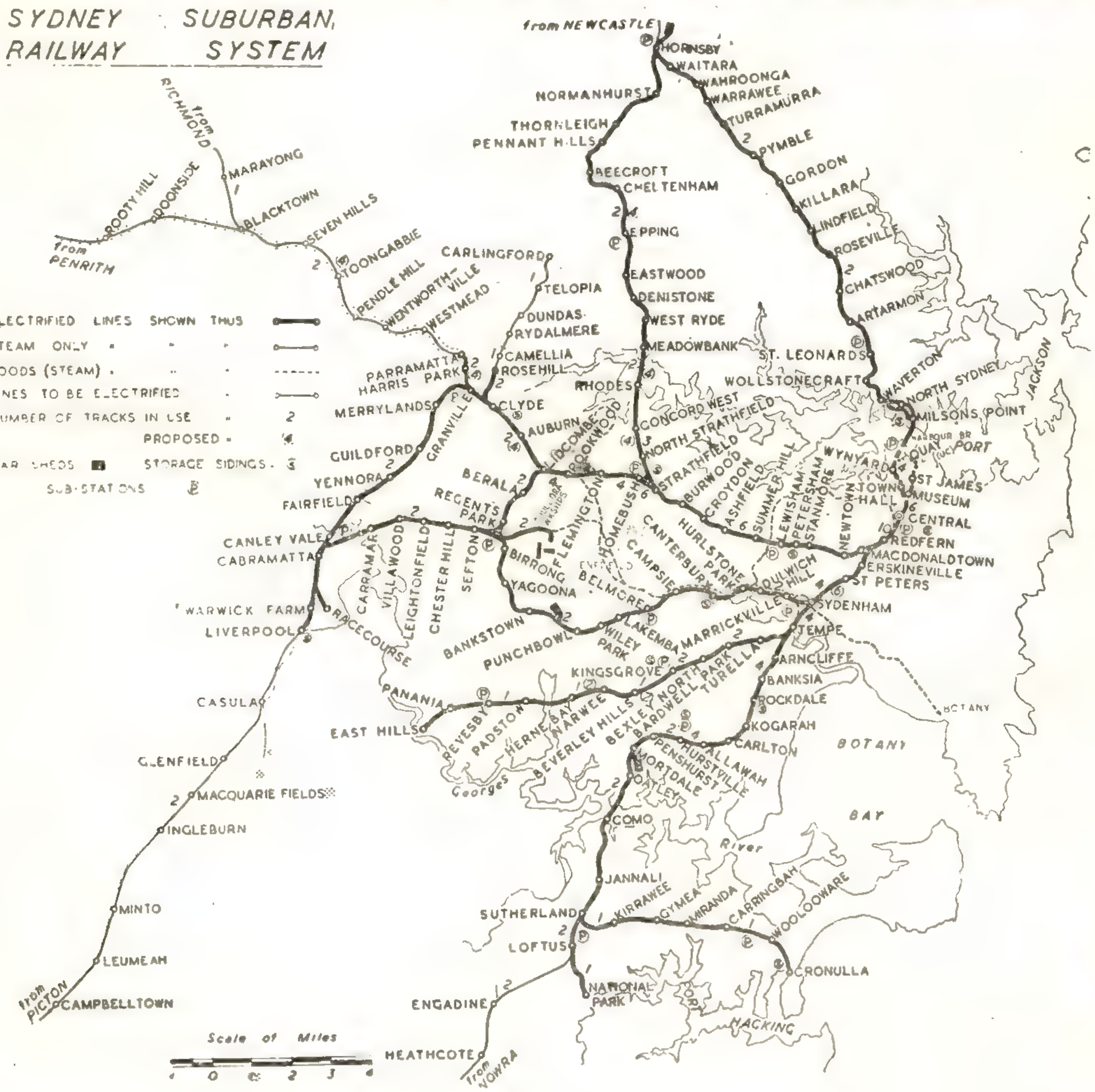
The departure from Cootamundra was only half a minute behind the scheduled time of 12.46 p.m. and, although the allotted time was exceeded when the train ran into the siding at the Demondrille Coal Stage where there was an 18-minute stop for engine requirements, Harden, a few miles further on, was left behind only 4½ minutes late. In another three miles, however, just after passing Cunningar, a signal stop of 3½ minutes indicated that something was amiss ahead. Ten minutes later another adverse signal brought the train to a stand for 23 minutes, and distant rain caught up with the train. A severe permanent way slack a couple of miles further on, just before Rocky Ponds, where a freight train had slunk into a siding, showed the cause of the trouble. Extensive re-sleepering beyond Bowning caused very slow running, all these delays resulting in the departure time at Yass Junction being 39 minutes later than the tabled 3.05 p.m., after a 2½-minute stop.

The slack schedule became more apparent on the next 58 miles to Goulburn, covered in 80 minutes or 21 minutes less than the booked time! This included the climb of 521 feet from Fish River to the top of the Great Dividing Range at Cullerin, 2,395 feet above sea level, and comprised almost continuous reverse curves and 1 in 75 grades. Once over the top, the line enters the Lake George basin, where some smart running took place, as witness, 19 minutes 23 seconds for the 18 miles to Goulburn Loco Box. Two-and-a-half miles before reaching Yarra, having dropped the first mile at 1 in 40, the eastern branch of the Dividing Range was crossed without effort. Goulburn was reached only 18 minutes late and, after engine requirements there, the departure was 20 minutes behind the scheduled 4.56 p.m.

Conditions were easy after Goulburn, except for incessant curves, and the 49 miles to Moss Vale were covered in exactly one hour. On leaving, the lag was reduced to 12½ minutes and, further still, to 11 minutes on leaving Liverpool at 7.44 p.m. That was the end of recoveries, however, as signal checks at Berala and Lidcombe lost 2½ minutes to Strathfield. The final 7¼ miles into Sydney, arriving 18½ minutes late at 7.28½, was an anti-climax. 19½ minutes were required — shades of the run in from Caulfield to Melbourne!

Sydney Suburban Electrics

The next afternoon I made the return trip by "spark" to Cronulla, On my first visit there, in 1931, a steam tram ran by the roadside from Sutherland. This had disappeared by March, 1932. Of interest



COMRAILS BUDD RAILCARS
Fast New Local Services

To the delight of the railway enthusiast, the Australian railway authorities, both State and Commonwealth, continue to order new locomotives, both steam and diesel, with steam still very much in the preponderance. Many of these orders were listed in our last issue; more are given below.

Cars leave Port Pirie Junction at 12.40, Mondays to Saturdays, running through to Pimba on Tuesdays and Fridays; at 4.55 p.m., Mondays, Wednesdays and Fridays, for Port Augusta only; at 11.16 p.m. on Sundays for Pimba. Return trips leave Pimba at 5.05 a.m., Mondays, Wednesdays and Fridays, with additional trips from Port Augusta only on Tuesdays, Thursdays and Saturdays; from Port Augusta at 3.45 p.m. on Sundays, and 3.55 p.m. Mondays, Wednesdays and Fridays.

Running time is 65 minutes to Port Augusta, and 2 hours 10 minutes thence to Pimba. Standing time at Port Augusta on through trips is 15 minutes (10 minutes on the Down Sunday trip).

Attractive Cars

The cars are classified CB, and are numbered 1-3. On the through run, two cars are used, one bei[ng] detached at Port Augusta in t[he] Down direction and picked up there on the Up journey. Connections are made at Port Pirie Junction to and from Adelaide, via the South Australian Railways.

Externally, the cars are in unpainted stainless steel, with "Co[m]monwealth Railways" in modernis[tic] blue lettering on the letterboard. The class letters and number [are] carried on the middle of the s[ide] panel.

The interior colour tones are plum and light grey, the side panels bein[g] in the darker colour. The seatin[g] is upholstered in blue moquette w[ith] red leather headrests. Lighting [is] by luminator lens type lamps mounted under the longitudinal luggage racks, whilst basic lighting is by fluorescent tubes.

The crew comprises three men — motorman, train porter and guard. The guard handles the safeworki[ng] in that he transfers the train s[ta]ff between motorman and staff station.

Long Distance Test

Before the cars were regularly assigned to the schedule, a test run was made over the Transcontinental line between Port Pirie Junction a[nd] Kalgoorlie with the three c[ars] coupled together. It has been reported that the run was made in 18 hours, but that the state of the track prevented the cars from making the sustained high speeds [of] which they are capable.

On a run sampled on 14th May la[st], CB2 was on the job, running [the] 12.40 p.m. ex-Port Pirie Junct[ion] connecting with the 7.50 a.m. [ex] Adelaide. The acceleration of [the] car is excellent and, although the noise of the engines is marked at lower speeds, the engine noise (and engine speed) is much diminished once the direct drive is engaged.

The Down trip of 56½ miles [to] Port Augusta was made in 64 minutes 30 seconds, including stops costing 59 seconds. The best run was of 6 miles in exactly 5½ minutes. On the Up trip, 20 miles w[ere] covered in 19 minutes .03 second[s].

---

on the recent trip were the single track from Sutherland, the crossing stations, and the long platform at Cronulla. The latter, 21½ miles from Sydney, is the furthest station in the electrified area.

That evening, and during the next three weeks, I made many runs on 'fasts" in each direction between Central and Strathfield, and never ceased to be amazed by the running of these trains. When late, they can reduce considerably the time allowed.

One night, the 11.32 p.m. Up, with stops at Burwood, Croydon, Ashfield and Redfern, drew into Central 2 minutes 20 seconds less than the scheduled 17 minutes. The best run on a "Redfern only" was 1 minute 50 seconds up on the booked 14 minutes.

(To be continued.)

Club Notice Board

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: V.R. Institute, 3rd Friday of each month at 8 p.m. Secretary: K. S. Kings, 32 Hillside Pde., Glen Iris, S.E.6.

SYDNEY: Railway Institute (Devonshire St.), 3rd Thursday of each month at 8 p.m.

THE VICTORIAN MODEL RAILWAY SOCIETY meets 3rd Wednesday of each month at 8 p.m. at the Model Dockyard, Swanston St., Melbourne. Visitors welcome. Secretary: J. H. Hooker, 6 Huntinghower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 22 Whish Street, Windsor, N.3., Qld.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

Meetings last Saturday night in each month at 8 p.m. in Club House, at above address.

Interstate visitors given warm welcome.

Secretary: R. R. Steward, same address.

THE AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY meets regularly as follows:—

SYDNEY BRANCH: Railway Institute, Devonshire Street, Second Tuesday in each month. Secretary: H. H. Matthews, 27 Ross St., PARRAMATTA, N.S.W.

MELBOURNE BRANCH: Railway Institute, Flinders Street, Fourth Thursday in each month. Secretary: R. B. McMillan, 21 Evans Court, Toorak, S.E.2.

QUEENSLAND SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings every month; contact the Secretary, Mr. C. H. Garner, Gray's Rd., GAYTHORNE. Model Railway Section with operating O gauge, and HO under construction, meets first and third Mondays; contact the Secretary, Mr. C. Harrison (B3508), or the Public Relations Officer, Mr. C. McTaggart, 101 Laura Street, TARRAGINDI.

Although dated "February/March" to preserve sequence, this issue of "Railways in Australia" was published in July, 1951.

NEW FOR OLD

Practically every railway in Australia has or had large numbers of side-loading compartment cars. It has long been accepted that such cars are unsuited to modern conditions and, 22 years ago, the New South Wales Railways commenced a programme of conversion of hundreds of them to various forms of corridor car designs.

Last year the South Australian Railways followed suit, and all cars of the side-loading type (see illustration, top left) have been or will soon be rebuilt to centre-corridor cars with end doors and diaphragms, as in the illustration at right above.

Improved lavatory accommodation, frameless windows, iced drinking water, cup containers, paper towel containers, new luggage racks, and a better type of seating all add up to better and more comfortable travel. Car interiors, one of which is shown in the large illustration, are decorated in tasteful pastel shades.

(The accompanying illustrations are reproduced by courtesy of the S.A.R. Institute Magazine, to whom we are indebted also for much of the information given above.)

Narrow Gauge Cars, Too

In addition to the side-loading cars, which operate on the broad (5 ft. 3 in.) gauge lines, the S.A.R. have modernised several of the narrow gauge cars of the type equipped with longitudinal seating. We hope to give details of this work in the near future.

FLASH !

Victorian Railways displaying modern equipment, No. 6 Platform, Spencer Street, August 3, 4, 5 Display includes R class, 280-h.p. railcar, roomette, twinette diesel switcher.

WAR BABY!

Wartime Lend-Lease brought the AC16 class 2-8-2's to the Queensland Railways. They were built by Baldwin and assembled at Ipswich Workshops for service on the 3 ft. 6 in. gauge lines of the northern state. Our picture, reproduced by courtesy "Truck and Bus Transportation," shows No. 224. The locos were subsequently purchased by the Q.G.R., and have influenced several features of later designs. In all, 20 of the AC16's were supplied in 1943.

MOTIVE POWER IMPROVEMENTS
Many Locomotives on Order

The Commonwealth Railways have taken delivery of three Budd rail-cars, Model RDC-1. These cars run a service between Port Pirie Junction, S.A., and Port Augusta, S.A., daily, with an additional service through to Pimba, S.A., three days a week.

SOUTH AUSTRALIAN RAILWAYS

Garratts From Belgium

Particularly interesting is the order for ten 4-8-2 + 2-8-4 Beyer Garratts from the Societe Anonyme Franco Belge. These locos will be identical with those recently imported by the Queensland Railways, and are intended for operation on the narrow gauge (3 ft. 6 in.) section between Terowie and Quorn. They are required for the anticipated increase in the Leigh Creek coal traffic, and may work over the Commonwealth Railways narrow gauge lines north of Quorn until the new standard gauge line is built.

Ex-Victorian Mikados in Service

The ten ex-V.R. N class 2-8-2's (see front page illustration) now in service as the S.A.R. 750 class are all allotted to Tailem Bend to work the Murray Lands lines, which have 60 lb. rails. One engine (755) is out-stationed at Narracoorte to work three freight trips weekly to Wolsely. On 13/5/51, Nos. 753 and 759 were still at Mile End undergoing modification.

Yard Diesels

The two pioneer diesel-electric switches, Nos. 350-1, are working freight in Mile End Yard. It is understood that they have not been successful in transfer and suburban work.

Tenders have been called for the manufacture and supply of ten diesel-electric "shunt" locomotives, either in complete working order or in parts for completion at the Islington shops. Tenders close at noon on 7th August next.

COMMONWEALTH RAILWAYS

Road Diesels for Centre

Birmingham Carriage and Wagon Co. are the successful contractors for 14 diesel-electric road locomotives for the 3 ft. 6 in. Central Australian line. They will have 950 h.p. Sulzer engines.

Standard Gauge Lines

At least one of the new L class 2-8-2's has been in service for passenger traffic. No. 81 hauled the "Trans" express out of Port Pirie Junction on 14th May last. It was thought at one time that the ten locos of this class would remain in storage pending completion of the standard gauge line to Leigh Creek for which they are intended. The present motive power position on the 4 ft. 8½ in. gauge line is giving cause for worry. In May last, the following locomotives were noted in "Siberia," sidings for derelict engines one mile from Port Augusta:

Ca (4-6-0): 78, 79; Cn (4-6-0): 73, 74; D (4-4-0): 158-161, 163; G (4-6-0): 1, 3-5, 7-8, 12-14, 21, 25; K (2-8-0): 27, 32, 33; Ka (2-8-0): 35-36, 38-42, 45-47, 51-52, 54, 56. Total — 37 locos.

In addition, the C class 4-6-0's have suffered heavily from hard work during and since the war, and are frequent visitors to the Port Augusta shops.

VICTORIAN RAILWAYS

R Class Arrive

The first two R class 4-6-4 express passenger locomotives, Nos. 702 and 703, arrived aboard the M.V. "Nordic" late in May. They were unloaded at Nelson Pier, Williamstown, on 1/6 and 31/5, respectively, and taken to Newport Workshops. There have been many minor alterations to piping and fittings and, as part of a thorough examination, all wheels and motion were removed. The locos are now in service.

Experiments are to be conducted with the balancing of these engines and will consist of three types, having 33, 25 and 0 per cent. of reciprocating weights balanced. This is to examine their effect on the tracks; at present, the Way and Works Branch will permit them to be used only on the North-eastern line. (We understand that there is no truth in rumours which were concurrent recently that defects existed in at least one locomotive on arrival —Ed., R. in A.)

The next two to be delivered, Nos. 705-6 are due in M.V. "Hector" on 15th July.

D2's Renumbered

To avoid having two locos numbered 702 on the books, the D2 class 4-6-0 of that number was renumbered 581 on 6/6/51. All D1 and D2 class engines will be numbered in the 500-600 block in future. Previously D2's were numbered in the 700 series. D3's will continue to use the block 601-699.

TASMANIAN RAILWAYS

Tank Locos for Sale

DS class 2-6-4T locomotives are being offered for sale by the T.G.R. These machines originally came from the New Zealand Railways.

V.R. Test Leigh Creek Coal

The Victorian Railways obtained recently a sample of Leigh Creek (S.A.) brown coal for testing in pulverised fuel fired locomotive X32. The fuel was transported in one of the special CK class fuel hopper cars.

JUBILEE TRAIN
Victorian Celebrations

To mark the 50th anniversary of Federation, and the 100th anniversary of the discovery of gold in Victoria and the separation of that State from New South Wales, celebrations are being held throughout Victoria during 1951.

On 1st February, the Governor of Victoria, General Sir Dallas Brookes, wielded whistle and green flag to start the Victorian Railways' Jubilee Train from Spencer Street, Melbourne. This 13-car rolling exhibition has made three tours of the State, covering as many towns and villages as possible, together with a visit to Adelaide, S.A. Exhibits, depicting all aspects of Victoria's establishment and development, were arranged so that the thousands who crowded the train at all stops entered at one end and left at the other, having viewed the various subjects in order. The train proved far more popular than anticipated. At many points not all who wished could view the exhibits, and the itinerary had to be extended. Entertainers who travelled with the train gave shows at most places of importance.

The cars used were mainly PL types formerly used on hospital trains, and converted at North Melbourne, Ballarat and Bendigo shops. A van was fitted with petrol-electric lighting equipment. All cars were painted bright green with a yellow-gold band.

The first post-war V.R. locomotive No. 430 (N Class 2-8-2) was used to haul the train, being painted green and gold, and fitted with a bell.

Tenders Called By Comrails

Tenders have been called by the Commonwealth Railways for the construction of earthworks, culverts, etc., for the new standard gauge line from Stirling North, near Port Augusta, S.A., to the Leigh Creek coalfields. The new line will follow a different route to that of the existing 3 ft. 6 in. gauge Central Australian line, thus avoiding heavy grades north of Quorn, S.A.

N.S.W.R. 40-TON GONDOLAS
Over 400 in Service

Since the first arrived in September, 1950, more than 400 of the German-built 40-ton G class bogie gondolas for coal traffic have been imported and erected at Clyde wagon shops. This was announced recently by the Secretary, New South Wales Railways.

Referring to rumours that the axle-box covers fitted to these cars tended to fall off in traffic and were acquired by small boys for billy-cart wheels (they are circular in shape, and of a type new to the system), the Secretary, Mr. W. A. Anderson, said that, out of well over 3000 of these axle-box covers in service, only a few have been missed; this loss was attributed to inexperience with the new design, and is expected to disappear.

It was stated that the new cars are giving good service.

NEW V.R. BALLAST CARS

Numbered 46-145, inclusive, 100 new 30-ton ballast hopper cars are now in service on the Victorian Railways, classed NN. Cubic capacity is 25.5 yards, and the tare weight of each vehicle is 14.3 tons.

NEW POWER STATIONS

At present under construction is a branch from Stirling Junction to the new £10,000,000 power station at Curlew Point, S.A. The Premier of South Australia has announced that a second power station of similar size is planned.

COMRAILS DIESEL SWITCHERS

Former U.S. Army diesel-electric centre-cab switchers Nos. DE90 and DE91, have been observed working as yard shunters at Port Augusta and Port Pirie Junction respectively. These locos., formerly N.S.W.R. Nos. 7920 and 7922, were previously reported as working on the Pimba-Rocket Range branch.

NO PASSENGERS

As from January 15 last, passenger accommodation has not been provided on the narrow (2ft. 6in.) gauge Moe-Platina line of the Victorian Railways. From the same date, the weekly regular train has run on Fridays, instead of Mondays, to avoid the inconvenience caused by the number of public holidays which fall on a Monday. It is understood, unofficially, that traffic has required almost a daily service in recent months, and that passengers have been permitted to travel in the guard's van "under the usual conditions."

Always of great interest to railway enthusiasts was the religious pilgrimage held annually on Good Friday at Maryfields, near Campbelltown, N.S.W. Three 20 class 2-6-4T's were required to heave this nine-car train over the 1 in 19 grades encountered leaving the Main Southern line just south of Campbelltown. Regular practice was for the train to run out from Sydney with one loco., the others being attached at Campbelltown. A shuttle service was then worked over the short run involved. (Photo. by Trem Watson, reproduced by courtesy "Truck and Bus Transportation.")

"TRA NS" EXPRESS
Typical Consist

For those who may be interested to know just what the famous "Trans" express on the Commonwealth Railways' East-West line is like, the following is the consist of the west-bound train on 14th May last:—

Loco—L class 2-8-2 No. 81;
Relay Van (train crew sleeper) HR class No. 30;
Mail Van M class No. 69;
Bogie Louvre Van LA class No. 253;
1st/2nd Passenger Car ABP class No. 15;
2nd class Sleepers BR class No. 43, BRA No. 70, BRPF No. 5 (last includes sitting accommodation);
Diner DA class No. 52;
Parlour Car AF class No. 25;
1st class Sleepers ARA class Nos. 72 and 71, AR No. 47;
Van HRA class No. 57;
Total: 13 cars/430 tons without diner.

YANNATHAN LINE GOES

Permission has been granted by an Act of the Parliament of Victoria for the dismantling of the Bayles-Yannathan line. As from 22nd June, the Koo-wee-rup - Yannathan train staff was withdrawn and replaced by one inscribed "Koo-wee-rup - Bayles." The Way and Works branch are in possession of the Yannathan section of the line, and a diesel crane is employed lifting rails into railway vehicles.

S.A.R. RAILCARS

The first converted Brill M.U. railcar, No. 42, is now in service; No. 38 is due shortly.

Ballast Tamper

A Matisa tamper was noticed at Mile End Per. Way Depot recently.

ELECTRIC RAILWAYS

For full details of new construction and current happenings on the electric lines of the New South Wales and Victorian Railways, see the July issue of "Electric Traction" now available.

This magazine may be had for 13/6 yearly, post free.

THE RUSSIAN VIEW

Comrade I. T. Solovev, an engine-driver on the Transbaikal Railway, was not struck favourably by what he saw of British Railways. "People work there like machines, without a creative spark. . . The depot workers do bad quality work in repairing engines, and these are often out of order. . . How pitiful to look at the little trains creeping along British lines."

(What? No vodka?)

ROOF RAILWAY

Early model railways were often most unconventional, and not the least of these was one constructed by M. Fehlmann, of Zurich, on a rooftop. In this cramped space he operated a 1.69 in. gauge layout which consisted of a terminal in which most lines were connected only by a traverser. No trains ran anywhere, rather limited shunting being the basis of operations. Locomotives followed Swiss prototypes, carriages and wagons were patterned after various European systems. An old photograph shows the layout to have been well built and detailed. Wooden rails, of inverted U section were used. M. Fehlmann died, at the early age of 19, in 1906.

QUESTION BOX

Questions on railway matters may be addressed to "Question Box", c/o Traction Publications, 29 Seymour Grove, Brighton Beach, S.5, Vic. Replies cannot be sent direct under any circumstances.

Mr. D. BOURNE, of Werris Creek, N.S.W., asks:—

"Since tractive effort is determined by the formula—

$$T = \frac{S \times D^2 \times Pm}{\text{Wheel Diam.}}$$

why is the tractive force increased when dealing with a superheated engine?

ANSWER:

In the above formula, the term Pm is used to denote the mean boiler pressure available at the cylinders on starting. For superheated locomotives, it is generally accepted that Pm should be 85 per cent. of the boiler working pressure, in order to calculate the starting tractive effort. The drop in the pressure between boiler and cylinders is due mainly to the frictional resistance encountered by the steam in the regulator, steam pipes, and the superheater itself.

In order to give some tangible acknowledgment to the undoubted superiority of the superheated engine over its saturated counterpart, it has become the practice on some railways to calculate the tractive effort of the latter using 80 per cent. of the boiler pressure. This gives, in an arbitrary fashion, an allowance for the increased hauling power of a superheated locomotive.

For instance, on the Victorian Railways, where the practice of derating saturated engines is in vogue, the saturated D1 class 4-6-4 is credited with a tractive force of 19,660 lbs., whilst its otherwise identical superheated counterpart has a rating of 20,540 lbs.

(Continued from page 2)

South Australian end of the East-West line. This, too, is likely to grow: at one time, local passengers scarcely existed.

The foregoing remarks apply to the standard gauge lines. Changes are coming to the narrow gauge sections, too, in the shape of modern passenger railcar service, and increased freights. It is, however, as yet too soon to comment on this aspect, as much depends on whether or not proposed new lines in the Northern Territory are built to the narrow or standard gauge—or not at all!

WG class 2-8-2 of the Indian Government Railways is a recent addition to the motive power of that system. Running on the 5 ft. 6 in. gauge, she is an impressively massive machine. (Courtesy S.A.R. Institute Magazine.)

RAILWAYS AND THE FILMS

Railway films of one kind and another seem ever to be with us. Two of the most recent, both authentic as to accuracy of railway matters, but differing widely in subject and treatment, have been "Train of Events" and "Ticket to Tomahawk."

Jack Warner, who leans out of the cab window in the illustration on this page, made a most convincing London Midland Region driver in the British film.

On the opposite page, in a more belligerent mood, is Dan Dailey, star of the American production, who found more exciting things to do in between engineering.

Both illustrations are from stills of the respective films.

"Train of Events" followed the adventures of several quite separate and widely divergent groups of people, all of whom chanced to be travelling in an L.M.R. train which was wrecked most spectacularly. Railway shots were made with the co-operation of British Railways.

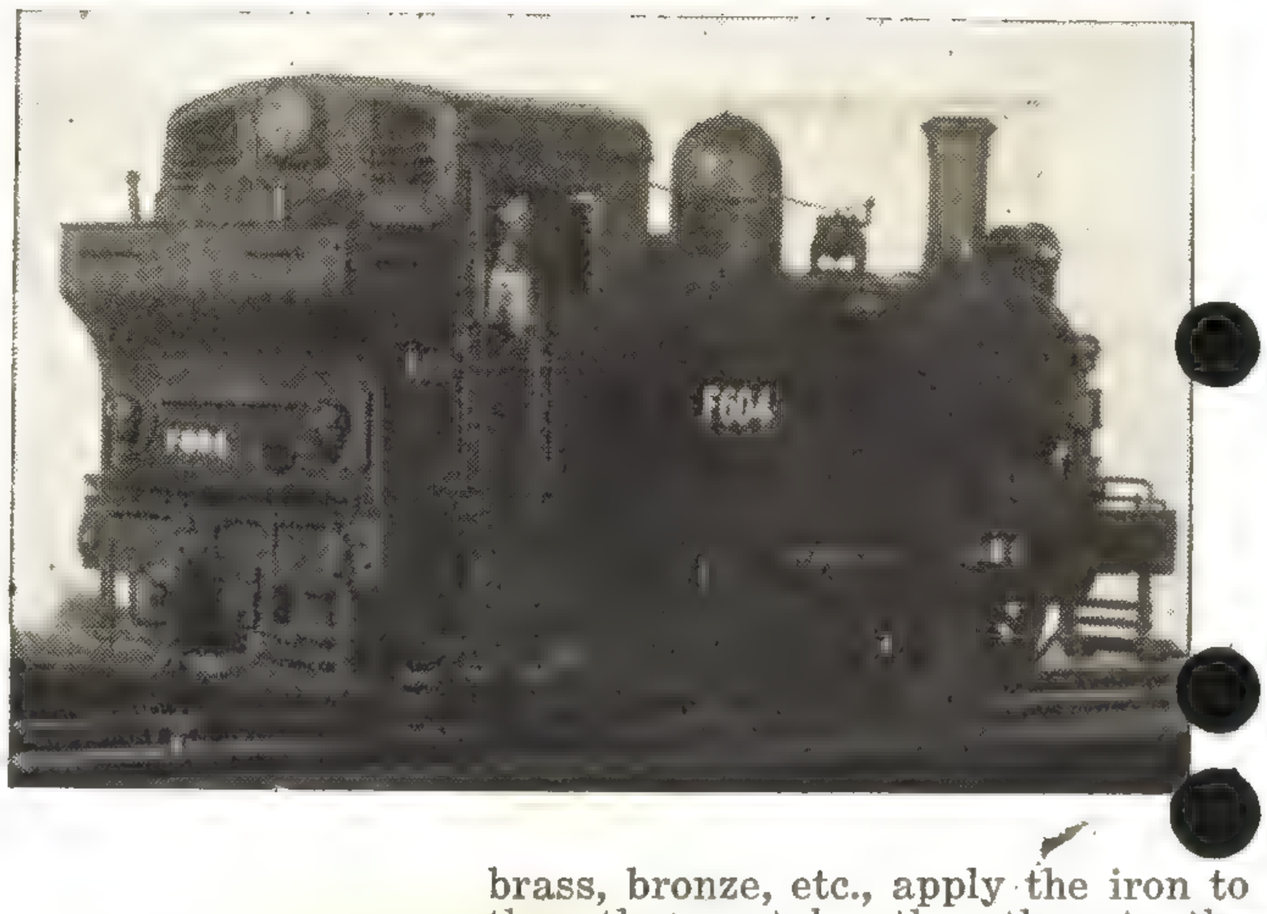
"Ticket to Tomahawk" was a particularly satisfying Western set in the heyday of narrow gauge railroad construction in the U.S.A. Use was made of the remnants of the once-great narrow-gauge empire of the Denver and Rio Grande Western R.R., and the railroad was not slow to capitalise on this with excursions in the district concerned. A pleasing blend of ancient and modern was used in the train specially prepared for the boom which followed release of the film.

MODEL RAILWAYS in Australia

ELECTRIC — STEAM — CLOCKWORK
ALL GAUGES
Contributions Invited

HOW TO HANDLE WHITEMETAL CASTINGS

By K. N. Lowry



(To avoid possible confusion from the necessarily curtailed instalment of this article which appeared last month, we have recommenced from the beginning.)

This month the Editor is allowing me to talk shop. However, a mere Sales Plug for my wares is not the purpose of this article.

The position is that quite a number of modellers write to me concerning problems they strike when using the various castings that I produce. As I am unable to have a yarn to every potential user of castings, it seems that an article covering these problems would help to make things easier for a lot of modellers. The hints apply also to any item processed from lead alloys, so that those who do not use my parts will nevertheless find useful material in this article.

SOLDERING

Lead-base alloys can be soldered, but it should be kept in mind that solder itself is a lead alloy, with a melting point not very much lower than whitemetal. So, leaning the iron on the casting while you listen to what wins the 3.30 Handicap is not recommended.

The idea is to work fast with a hot iron. As in any soldering, the iron should be clean and properly tinned, the work clean and suitably fluxed. The next important thing to remember is that when the casting is to be joined to another metal of higher melting point, such as tinplate, brass, bronze, etc., apply the iron to the other metal rather than to th casting. To illustrate, a bronze wi spring is to be soldered to the sha of a solid knuckle coupler, to m the coupler automatic:—

First tin the wire where it is to be joined to the coupler, hold the wire in place against the shank (in this instance, old pliers with the jaws ground smooth, to avoid marking the casting, are recommended), ap ly the flux, and scoop the so on to the iron, then apply the so iron to the bronze wire where it is to be joined to the casting. If iron is hot, the solder will flo the joint instantly, so you don't need

There's Something Doing — UP ALBURY WAY!

Model Railways are often regarded more sceptically by the man on the land than by the city dweller, with the result that modellers are more often prone to "hide their lights" in the rural cities than in the coastal cities. However, there is no doubt that Albury is seeking model railway emancipation, and recognition of equal rights for model railroaders!

Every Tuesday night the local radio station, 2AY Albury at 8.45 p.m. broadcasts a series of talks by George Jennings, entitled "Highways of Steel," which concerns the history and facts of the world's railways. The early history of England's railways is now being traced, and there is no doubt that a good deal of research and amalgamation of historical records is taking place. The theme of model railways is cleverly interwoven into the story, and one of these took my ear. The talk was about bridges. The Firth of Forth, Quebec and Royal Border Bridge had been mentioned; the announcer then said that model railways needed bridges, too, and that there were as many ways of building model bridges as there were of building real bridges, and so on. The aim always is to impress on the listening audience the fact that a Model Railway is "real," instructive, interesting and "A man's job."

Every Sunday morning at 9.30 a.m. over station 2AY, George Jennings also broadcasts a quarter-hour talk on some aspect of Model Railways.

Every month, about the 20th, a little publication called "The Model Railway Newsletter" emanates from Albury, and is sent free of charge to places all over Australasia and abroad, to persons known to be interested. Some well known names in Australian modelling appear in the June issue of this Newsletter, so it seems to have so far interested a number of senior model railroaders.

Blake's Newsagency in the principal thoroughfare, Dean St., has a very wide range of books on Model Railways, and copies for sale of many of the Model Railway journals, including, of course, "Railways in Australia!"

Things of interest were copies of the American magazines bound stiff covers, and marked "not sale" and containing inside statements that these magazines were available only on annual subscription.

Pacemaker Model Engineer Supplies, specialists in small gauge model railway equipment, entirely Mail Order has a depot in Alb and operates through Box 80, P Office, Albury.

Now this is a good deal of activ in one single city of 14,000 people for Model Railways, and there must be some reason for it all. There is! The reason is the establishment Albury of Australia's first m railway specialty wholesalers, The Australian Model Craft Co., of Box 118, P.O., Albury, who are sponsoring mainly the smaller gauges, but have some lines for "0" gaugers. It is understood that they are the wholesalers in any country ex U.S.A. who sell only model rail equipment; there are, of cou many wholesalers who carry model railways with other lines.

If you are interested in Model Railways it will probably pay you to make yourself known to these people as they appear to have come to stay, and to do something for the Hob

ADELAIDE INTERURBAN CAR

Here is the illustration promised for the plans of the Adelaide M.T.T.'s H class interurban car which appeared in our October / November issue last year. ("Truck and Bus Transportation" picture, from an official photo.) No. 358 is one of 30 cars of this type used on fast runs to the bayside beaches.

linger over it. However, there's no need to panic—if you tackle the job calmly, you will have ample time to apply the iron and remove it, before the melted casting lands in your lap.

However, what IS asking for trouble is twiddle-soldering. When soldering brass or tinplate, one can twiddle all day, removing those excess blobs and playing with the solder until everything looks lovely—and at the end of the fun and games one still retains the brass or tinplate, a little buckled perhaps, but otherwise intact. Following the same procedure with a lead-base casting costly. Blobbing solder on steel brass rarely makes a good joint, but solder fuses quickly with white metal, so that in nearly all cases, provided the joint is clean and flux applied, a blob of solder will make good joint with a casting—so there is no need to tinker with the joint as one might with a piece of brass. If you don't have too much solder on your iron, the joint should not be so untidy—but in any case, apply the iron until the solder flows, then whip away the iron, and if the job is clowned with a blob or hillock of solder, DON'T try cleaning it up with the hot iron. Remove the excess with a knife or file.

Flux is a matter for personal preference, but either paste or fluid flux will work on the white metal, and the effect of the flux on the other partner of the joint will depend on the material being used. If it is brass or bronze, a paste is all right, but if it is steel, such as piano wire, then an acid flux such as killed spirit or Baker's Soldering Fluid, is recommended. In fact, for anything except electrical joints, Baker's Fluid seems to be the better proposition, as it does not create such a mess as paste. With Baker's Fluid, corrosion will occur unless the job is cleaned after soldering. However, the cleaning process is simple and effective—have a container of clean cold water handy, and a rag—not just a damp rag, but an absolutely SOAKED rag. As soon as the solder solidifies at the joint, slosh the wet rag on the joint and adjacent area. There is no hurry required thereafter to mop up the water, but in due course the job may be wiped dry with a clean rag.

DRILLING AND TAPPING

Lead is a soft metal that clogs the flutes of a drill, and threads of a tap, causing breakages. If the drill or tap is lubricated with methylated spirits, clogging will be minimised and breakages avoided.

When tapping, use the smallest drill size shown on standard tables, e.g., for 3/32 in. Whitworth, use No. 50 drill, for 1/8 in. Whit., No. 41 drill, for No. 8 B.A. use No. 51 drill. Also, if a "through" hole is to be tapped, such as in the case of the lug on the back of a bogie sideframe, don't run the tap right through as you would with steel or brass, but use a taper tap, and tap the hole only until the point of the tap emerges about 1/16 in. from the other end of the hole. Thus the hole will be only partially threaded, and when the bolt is screwed into the hole, it will cut its own thread, ensuring a firm fit in the hole, and avoiding the looseness that can redeeply in the relatively soft metal of the casting.

CLEANING

Most of my own parts are sold with the bulk, or all, of the cleaning already completed, but in some cases it may be necessary to touch up some detail, remove flash from the

AUSTRAL RAILWAY MODELS Pty.

Burringbar Street, BALGOWLAH, N.S.W.
MANUFACTURERS of SCALE and SEMI-SCALE MODELS & TOYS
NSWR RIVERINA & NEWCASTLE EXPRESSES

0 gauge	Riverina Express Passenger Coach
	Kit for above, with blueprint
	Riverina Express Baggage Car
	Kit for above, with blueprint
	Bogie Refrigerator Car
	Box Car, with sliding doors
	Kit for above
H0 gauge	Riverina Express Passenger Coach
	Kit for above
	Bogie Stock Car
	Bogie Gondola Car (die-cast)
	Box Car, with sliding doors
	Kit for above

A.R.M. Auto Couplers—0 gauge 2/6 pr., H0 1/6 pr.
(Both couplers will work with Hornby and Trix)
If you cannot obtain these models and kits from your retailer, send order to factory.

TRADE ENQUIRIES INVITED

parting lines, or alter some feature to suit one's individual tastes.

For general work, and particularly for removing the heavy stuff, I find the coarse or bastard files most suitable. Files of this type come in all sizes from about 4 in. square upwards. They have less tendency to clog, and, after the heavy stuff is removed, if such a file is used lightly, a relatively smooth finish may be obtained, requiring only a little further work with fine files to complete the job. Second-cut files clog most easily with the soft metal, so they should be avoided in this work where possible. Whatever files are used, they will clog rapidly, but if they are cleaned frequently and the metal is not given a chance to pack hard in the teeth, the files are not difficult to clean. For the coarse files, use a file card (stiff wire brush) to remove the bulk of chips, then pick out the odd remaining bits with a sharp nail or an old scriber (NOT your good scriber, if you want it to retain its sharp point!). With the finer files, keep handy some small scraps of sheet brass. Run the brass strip across the file, at the same angle as the cut of the teeth—the file will cut grooves in the brass, corresponding sult from cutting the threads too to the teeth of the file, and by running the brass across the file, the metal clogged in the teeth will be removed. Should you neglect your files to the extent that neither file card, scriber, scrap brass, nor hearty swearing will unclog the file, soak any such files in a dish of boiling water. This will soften the clogging metal, which can be removed by the previously mentioned methods. If files are rubbed with chalk, they will metal. However, after use, they have less tendency to clog with soft should be cleared of the chalk, as chalk absorbs moisture which may cause the file to rust.

Certain cleaning jobs can be done better with sharp knives and wood chisels, and these tools have the advantage over files because they don't clog. For finishing, and removi small file marks, emery cloth an steel wool are very useful; and for cleaning in inaccessible corners and crevices, the ideal implement is a brass wire brush, the type used for cleaning suede.

In addition to the coarse files, a good investment is an 8 in. or 10 flat smooth file, a contact or magne file, and a selection of small pattern files—flat, round, square, half-rou —for finishing work. These files a useful, not only for cleaning castings, but for a host of other jobs around the pike.

(To be continued)

Everything for the Hobbyist!

THE HOBBY SHOP

Adelaide's Leading Model Store

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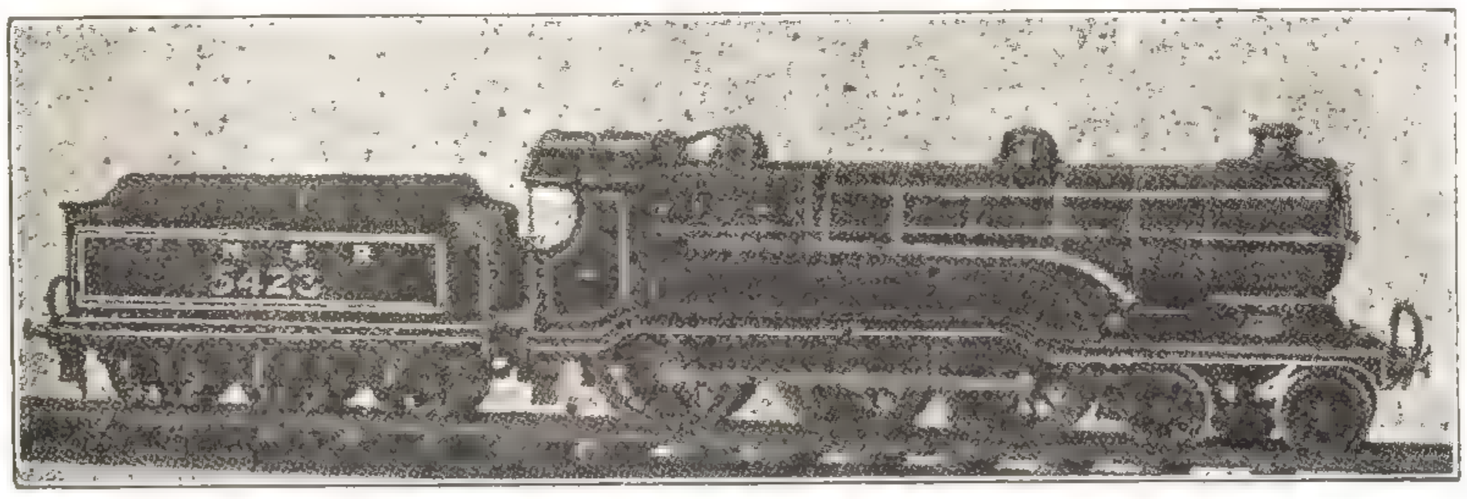

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MAYFIELD LINES

Owing to lack of space, it has been necessary once again to omit further chapters of Mr. Clark's article on the Mayfield Lines. Another interesting instalment will appear in our next issue.

HOW TO SEND MONEY.

Many readers seem to have difficulties in sending money for subscriptions, the following advice may help.

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Formation Announced

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4. To make N.M.R.A. standards and A.M.R.A. standards a practical possibility by enlisting the co-operation of modellers, manufacturers, suppliers, and publishers who may be interested in the furtherance of fine scale modelling in Australia.

5. To improve supplies and data and providing services to members from within the Association.

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7. To work in association with similar organisations for the common good and benefit of model railroading.

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LETTERS TO THE EDITOR

DIESEL v. STEAM.

The Editor,
Railways in Australia.

Dear Sir,

I wish to state the full case for the dieselisation of the South Australian Railways' Hills line. At present, decisions concerning the type of motive power most suitable for the S.A.R. are very difficult to make. It is a well-known fact that diesel locomotives are much more efficient than steam locomotives. Also, the S.A.R. suffers from coal shortages and coal of a poor quality. The coal now received from Newcastle is very poor compared to pre-war standards, being unscreened, and the Leigh Creek coal which supplements it is even worse. To overcome this difficulty, a large number of S.A.R. steam locomotives has been converted to oil-burning; this, however, is wasteful of oil, as compared with diesel-electric locomotives. For example, 30 tons of fuel oil in steam locomotives produces the same amount of work as 10 tons of Diesel oil in diesel-electric locomotives. The former costs £10 per ton, while the latter costs £15 per ton, making the steamer twice as costly as the diesel.

The snag, of course, is that, in the event of war, diesel oil, being imported, would become scarce. Consequently, the S.A.R. does not intend to embark on extensive dieselisation.

Dieselisation is admirably suited for the Hills line. The S.A.R. cannot consider duplication just now, for labour and material reasons. Similarly, it is not possible to relay with heavier plant. Hence, more powerful steam engines cannot be introduced because of the higher axle loads. Garratts and articulated locomotives are undesirable also, because of greater length.

The diesels are faster than steam. A 500-class locomotive requires one shift to work from Mile End to Tailem Bend, hence the crew must be quartered overnight at Tailem Bend. With diesels, it is hoped to work the crew and locomotive there and back in the 8-hour shift, which will double the worth of both crew and engine.

There are more reasons why diesel-electric traction is more suitable for the Hills line. It seems that Roger Boland (R. in A., 12/50) must think that railway officials know comparatively little compared to railway enthusiasts. I can assure him that the problems involved are gone into thoroughly, and all information sifted before a decision is made. S.A.R. railway engineers are in full knowledge of overseas experiments and experiences.

As a matter of fact, the locomotive that fills the order completely for the S.A.R. is the coal-burning gas turbine. The S.A.R. is following closely the results of overseas experiments in this line, and ten years may see this form of power on the Hills line. These locomotives could burn the low-grade Leigh Creek coal and turn in high efficiency figures.

I think Roger Boland is only making excuses for the steam locomotive because steam seems to be so awesome to railway enthusiasts, more so than the impersonal diesel. In the drawing office, economics come before sentiment.

Yours, etc.,
C. R. STEWIENIE
Semaphore, S.A.

(Our correspondent's assertion that the S.A.R. are not biased in their choice seems borne out by the recent order for Garratts for other services. See news columns.—Ed.)

OUR FAN MAIL

It is regretted that pressure of work prevents our replying direct to correspondents except on business matters.

M. D. McKENZIE, N.S.W.—Sent as requested; thanks for good wishes.

J. W. HIGGINS III, Las Cruces, Mexico.—New address noted.

K. J. QUINLAN, Concord West, N.S.W. —Information most valuable, thanks. We get far too little of that type.

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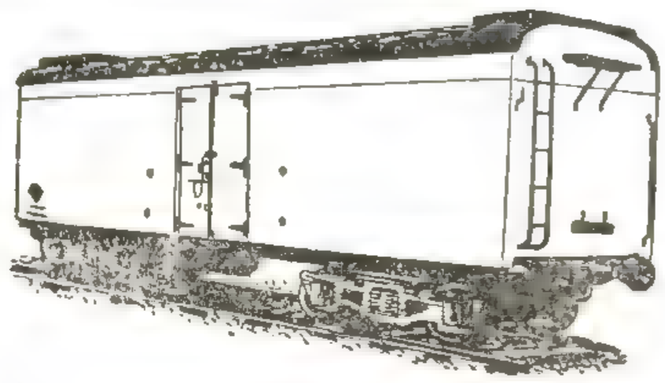

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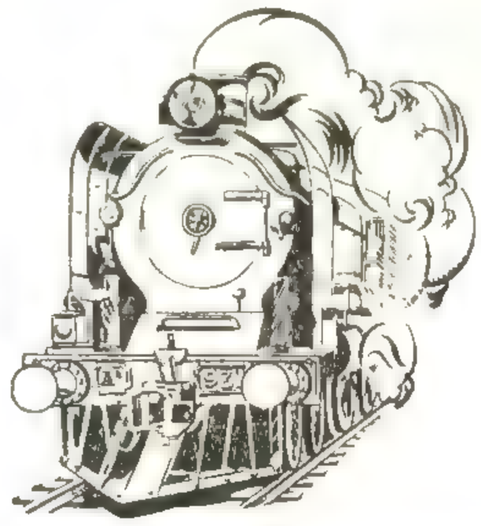

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Vol. IV, Nos. 4-5 APRIL-MAY, 1951

Snow in the Sunny South!

V.R. Train operates through snow near Kalkallo, Vic.
"Age" Photograph

A D3 class light 4-6-0, at the head of a mixed train, "in the hole" for a passenger train on a single track stretch of the Victorian Railways (5 ft. 3 in. system. D3 class engines are used for light passenger and mixed train working, being seen also occasionally on goods trains.

Location of the station in the photograph was not supplied. If any knowledgeable reader can identify it, we should be glad to hear from him.

(Courtesy Victorian Railways Publicity Department.)

A Word From Your Editor

Thanks to the enterprise of the Middle Brighton Printery, we have secured some two years' supply of good quality paper. It is, in fact, even now occupying rather more of the spare bedroom than Mrs. Editor cares to see!

With this problem overcome, the rest is in your hands. Keep up the subscriptions and get us new ones, and you will have "Railways in Australia" back on its regular schedule. While we appreciate shop sales, don't forget that we lose one-third of the revenue from each sale. So, if you can, subscribe direct.

Inflation is a problem, of course, particularly the increased postal charges, but subscription rates will definitely not be increased this year.

Better Service

For some months now we have been in the process of improving the method of recording subscriptions and despatching the magazines. This job is about two-thirds completed. When fully in use, the new method will eliminate most of the errors which have occurred in the past, particularly during the transition period.

In cases of doubt, we invariably send a second copy rather than risk having sent none at all. If you receive two copies in this way, give the second copy to someone who seems interested. Copies returned by post are too mutilated to be of use to us.

Cheerioh till next month.

THE EDITOR.

RAILWAY ELECTRIFICATION

Changes Coming?

Commencing in the August issue of "ELECTRIC TRACTION" is an article entitled "A New Era of Railway Electrification". Written by a railway engineer, this article deals with the wide field opened up by the advent of the modern rectifier car and rectifier locomotive recently introduced in the United States.

Place a subscription now for "Electric Traction" and read about this and other aspects of the tramway and electric railway field.

PUBLICATION DATE

Although dated April-May to preserve continuity, this issue was actually published in August.

(For details, see "R. in A.", 9/49.)

BUDD CO. APPOINTS REPRESENTATIVE IN AUSTRALIA

The Commonwealth Engineering Co. of N.S.W. has been appointed as Australian representative of the Edward G. Budd Mfg. Co. of Philadelphia, U.S.A.

Main interest in this arrangement is that it gives in Australia an agent for the Budd R.D.C., self-propelled diesel railcar, three of which were supplied to the Commonwealth Railways earlier this year.

Test Run

"Comeng" has announced certain details of a test run made on one of the Commonwealth Railways cars on 28th April, 1951. The overall time taken for the 1,050 miles between Port Augusta and Kalgoorlie was 18 hrs. 40 mins., giving a gross average speed of 56.2 m.p.h.; considering the 35 stops made en route the actual running time occupied was 16 hrs. 49 mins., or an average speed of 62.5 m.p.h. The maximum speed attained was 90 m.p.h., and over the section Ooldea-Nurina, a distance of 317 miles, the average speed was 72.6 m.p.h.

The cost of fuel is given as 4 pence per car mile.

ACKNOWLEDGMENTS.

"Interurban", author of the article on the Corrimal Coal Company's railways in our December issue wishes us to express thanks to Ken McCarthy for accompanying map. This would have been done in the second part of the article, illustrating and describing the locos; this section has had to be held over for the time being.

Another delayed acknowledgment is that to Mr. John Buckland for the fine photo of the Queensland Railways freight train used on our January cover.

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HOLIDAY BY RAIL

BY C. EINSIEDEL

(Continued)

In this instalment, Mr. Einsiedel takes us down the scenic Illawarra Line, along the South Coast of New South Wales; without a pause for [illegible]nth, he is back in Sydney and off on a 24-hour round trip to the West! (Most of the points mentioned will be found on the N.S.W.R. map in our January issue.)

Next came the trip to Nowra and return, commencing with the 8.45 a.m. "South Coast Daylight Express". The train started from [illegible]latform 13 which is the furthest [illegible] used for steam trains. Engine 3209 was at the head of 230 tons of old stock (though perhaps not so old as the engine). At the end of 1949 a new air-conditioned train, headed by a "38", was assigned to the run; [illegible] "38" is replaced at Thirroul, [illegible]re being no turning facilities large engines beyond that point.

Use of a "dive" beyond Redfern enables the train to reach the eastern-most track, the Down Illawarra through line, without interference from other trains on the ten tracks at this point. Quad-[illegible]e track exists to Hurstville (9¼ [illegible]les), the first stop. Crossing George's River on gauntletted [illegible]k over the bridge at Como [illegible] miles), the ruling grade in the Down direction is encountered on a mile of 1 in 42 after shorter lengths of 1 in 44 and 1 in 51. [illegible]ing 311 feet on this section of [illegible]miles to Sutherland, the next stop, the "32" did well to record 8 min. 22 sec. The climb along the top of the ridge continues for the next 8 miles to the highest point (771 feet) just before Waterfall (24 miles), after which the country becomes mountainous and [illegible]ves are down to 10 or 12 chains [illegible]us. Tunnels commence after [illegible]lensburgh (28¾ miles), and, im-[illegible]diately on emerging from the [illegible]arth, just before Stanwell Park (34¾ miles), the passenger is confronted with the view of ocean landscape so much pictured in rail-[illegible] advertising and tourist litera-[illegible]e. And what a wonderful view it is! There is more gauntletted track through the tunnel after passing Coalcliff (36¾ miles).

Stops at Austinmer and Thirroul (42½ miles) were brief affairs of [illegible]sec. and 41 sec. respectively, [illegible] served as my introduction to [illegible] smart station work which I found to be general throughout the State. The 18 scheduled stops between Sydney and Nowra, Wollongong excepted, averaged only 34 seconds each. At Wollongong (51½ miles), ten minutes is allowed for refreshments and engine require-[illegible]nts, while the longest of the [illegible]r stops were 83 secs. at Kiama, and 76 at Berry.

A signal stop of four minutes just past Bulli (44¾ miles) was the main cause of a 6½ min. late arrival at Wollongong before which 5 min. 55 sec. for 4½ miles from Woonona to North Wollongong represented the fastest running on the Down trip. Double track was left behind at Unanderra (54¾ miles), and more tunnels before and after Kiama (74 miles) bring the number for the 95 miles to thirteen. Perhaps no better idea of the general nature of the country in the eastern part of N.S.W. could be given than to state that there are 82 tunnels in use. Victoria has but seven, and only three of these on main lines.

Five minutes late leaving Kiama were reduced to two on arrival at Nowra. Starting about four miles from Nowra is a curve 170 chains in length and of 180 chains radius, changing direction by 54 degrees. This is not the longest curve in the State, as about ten miles before reaching Hay (in the Riverina) there is one a quarter of a mile longer, but the deviation is only 22 degrees, the radius being as great as 500 chains.

The return trip at 1.45 p.m. was with the same engine and train, the two cars dropped from behind the van at Wollongong on the Down journey being picked up there. As previously, there was some smart running on the Up side of North Wollongong, the seven miles to Thirroul (passed) taking just under nine minutes. The engine watered at Helensburgh during the stop of 4¾ min., while signal checks and stops up the bank between there and Waterfall were followed by a fast burst on the downhill stretch between Heathcote and Loftus. Speed touched 60 m.p.h. here, and time for the 4¼ miles was 4 min. 33 sec. The departure from the stop at Sutherland, and the arrival at Central, were both 8 min. late, the latter at 5.08 p.m.

Off Again

That same night saw me in a sleeper on the 8.20 p.m. Temora Mail on the start of a round trip from Sydney to Sydney via Harden, Cowra, Blayney, Bathurst, and Lithgow. I was agreeably surprised to find that the ACM (1st and 2nd class, sleeping and sitting) was a through car to Cowra, as I had envisaged having to get out of bed in time to change at Harden—at 4.20 a.m. It is not possible to see all the country between Demondrille and Blayney, a cross country route, in daylight on a through run and, by doing the trip in this direction, only the 17 miles to Young are missed.

What interested me about the load of 283 tons behind No. 3829 was its variety—KP, EHO, EHO, FS, BS, TAM, CR, ACM. The KP is a mail van with sorters aboard. It comes off with the engine at Cootamundra, while the leading EHO van goes to Wyalong, the other to Griffith. The ACM is dropped at Harden, and attached to the 5.15 a.m. to Cowra.

Departure from Central was six minutes late, but leaving Liverpool the lag was only four minutes, after which my next landmark was Young, at 6.02 a.m., a few minutes ahead of time.

Away 18 mins. later after much unloading of van goods, the Passenger to Grenfell (which had connected with the 9.30 p.m. Cowra Mail via Blayney) was crossed at Wattamondara, set in excellent crops of wheat, the ACM came off here, to be replaced by No. 3270 and an LFX, BX, and VHO to add to the LFX, BX, and EHO that had come from Harden, This load was much more than traffic required, and at least half of it was probably being worked back to Blayney, to which point the run was near enough to schedule all the way.

From Demondrille, the junction with the Main Southern Line, the country is undulating and falls 509 feet the 65 miles to Cowra, where the Lachlan River is crossed. From there, however, the rise is general and, with a ruling grade of 1 in 40, elevation increases by 2,072 feet in 44½ miles. The top of the bank is reached 2½ miles before dropping down into Blayney, 2,844 feet above sea level. In the opposite direction, this is part of the route used for transport of Lithgow coal to Victoria. There must be tons of the black mineral scattered alongside the line from well-filled trucks. Engine tenders, too, always seem to be piled high at the start of a run everywhere I went and, perhaps, all this explains why I saw permanent way workers standing well clear of trains!

The connection at Blayney was with the 10.10 a.m. from Orange. This was a train-set of six old centre-aisle end-loaders with No. 3,619 out in front, and an EHO van in the rear. After an LFX had been added at Bathurst, the load was still only 219 tons. A couple of ridges between Blayney and Bathurst do not provide grades worse than 1 in 70, but curves

down to 12 chains radius curtail speed considerably. The latter applies all the way to Emu Plains at the eastern foot of the Blue Mountains. The heaviest pulls in the Up direction are on the bank of 2½ miles at 1 in 48 soon after crossing the Macquarie River at Bathurst, and on the better-known mile-and-a-half at 1 in 42 up to the Zig-Zag Signal Box outside Lithgow. On this latter section there are two short lengths of curvature down to a radius of 8 chains. Tunnels—ten in three miles—are certainly laid on just after passing the box. In such rugged country, it is surprising that the rising grade is no steeper than 1 in 90. The first tunnel encountered (No. 10) is the longest, the next in length being No. 1.

Running was easy throughout, and, although the Friday schedule said "depart Lithgow 2.25 p.m.," the Mondays-to-Thursdays time—5 minutes later— was adhered to, and the arrival at Mount Victoria was 3 mins. early. There is no refreshment service on this train and after 16 mins. here, the departure was 3 mins. late.

When last in Katoomba (the next stop) in 1937, I was told that an overhead road bridge was to replace the antiquated level crossing with hand-operated gates, by which the Western Highway crosses the line. On this trip nothing had eventuated, for which I guess World War II gets the blame.

Then came an express run down the mountains to Penrith, where the engine took water, as at Bathurst and Mt. Victoria. An ugly mess of derailed cars caused by the breaking of an axle on an Up goods train early the previous evening was to be seen on the Up side of the line at the foot of the high embankment 2 mins. before passing Emu Plains.

Being a Friday, the Down afternoon traffic was particularly heavy and six trains headed west were passed between Penrith and Parramatta, with another between there and Strathfield. There was nothing special to report along the "race track" and, although signal stops outside Parramatta and Granville were the main cause of a 5½ mins. late departure from Strathfield, the run in from there to Central was so lively that the arrival was only 2½ mins. late at 6.05½ p.m. Running time for this 7¼ miles section was 12 minutes. I could not imagine a train approaching Melbourne doing nearly 50 m.p.h. less than a mile away—probably there are no facilities for such a thing—but that is what No. 3,619 was doing just before Redfern.

(To be continued.)

THANKS FOR NEWS.

For news items in this issue, we should like to thank, among others, Mr. William R. Pearce and Mr. R. T. Sloggett.

Club Notice Board

THE AUSTRALIAN ELECTRIC TRACTION ASSOCIATION welcomes all those interested in tramways, trolleybuses and electric railways. Regular monthly meetings are held.—

MELBOURNE: V.R. Institute, 3rd Friday of each month at 8 p.m. Secretary: K. S. Kings, 32 Hillside Pde., Glen Iris, S.E.6.

SYDNEY: Railway Institute (Devonshire St.), 3rd Thursday of each month at 8 p.m.

THE VICTORIAN MODEL RAILWAY SOCIETY meets 3rd Wednesday of each month at 8 p.m. at the Model Dockyard, Swanston St., Melbourne. Visitors welcome. Secretary: J. H. Hooker, 6 Huntinghower Rd., Malvern, S.E.3.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 22 Whish Street, Windsor, N.3., Qld.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: Y 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

Meetings last Saturday night in each month at 8 p.m. in Club House, at above address.

Interstate visitors given warm welcome.

Secretary: R. R. Steward, same address.

THE AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY meets regularly as follows:—

SYDNEY BRANCH: Railway Institute, Devonshire Street, Second Tuesday in each month. Secretary: H. H. Matthews, 27 Ross St., PARRAMATTA, N.S.W.

MELBOURNE BRANCH: Railway Institute, Flinders Street, Fourth Thursday in each month. Secretary: R. B. McMillan, 21 Evans Court, Toorak, S.E.2.

BRISBANE MODEL RAILWAY SOCIETY

Meetings held on 1st and 3rd Thursday of each month at 36 Goulburn Street, Kedron, Brisbane, at 8 p.m. Secretary, C. Harrison, 110 Haig Street, Stafford, N.3 (to whom all enquiries should be made). Gauges 0 and H0/00.

LOCO. HEADLIGHTS

Concerning electric headlights, there seems no standard practice in vogue in this country. New South Wales Railways favour the top of the smokebox where there is sufficient clearance and the top of the smokebox door, just above the boiler centre line for more modern locomotives. Number panels are not provided. Victorian practice is universal use of two inclined number panels, with the headlight mounted on a bracket attached to the top of the smokebox, in front but above the door, except in case of the S and H class, which have the lamp mounted on the smokebox door, above the centre-line. In South Australia, number panels are standard, but positions of the lamps vary from the top of the smokebox for old-type engines to the top (in front) above, and above the centre-line in the case of the bigger engines. Recent practice (with the exception of the 520 and 620 classes) has been to standardise on the smokebox centre-line position, which was first applied to the 720 class and later extended to 500, 600 and some 700 and 710 class engines.

THE SANSON-FOXTON LINE
(New Zealand)

The Sanson-Foxton line, in the North Island, was for many years the only county-owned line in the Dominion. The first mention of it is in the records of the Manawatu Council in November, 1878, when it was agreed to allow a railway company to construct the line. For some reason the company did not go on and, in 1883, the Council decided to construct the line itself. The Sanson-Foxton railway has a distinct link with Wellington, for the first locomotive was the old "Hibernia", which was used to haul Wellington trams; the price paid for it was £330, plus £30 for shipping. Its driver, James McIntyre, continued as driver on the new line. Later another engine, named "Weka", was acquired. This was the first locomotive built by the Otago Foundry at Dunedin (South Island). It was used on the Dunedin-Christchurch railway and later by the short-lived Manawatu-Wellington Railway Company. Today the old "Weka" is used by a sawmiller at Karioi.

The line played an important part in the development of the Manawatu and Rangitiki districts, and has now "packed up".

—G. JOHNSON

ERRATA.

We regret the two major errors in the last issue of "R. in A." The introductory paragraphs to the news items on the new Comrails Budd cars and Motive Power Improvements were interchanged accidentally. This was the fault of your editor who was helping out in the printer's shop to make up for staff shortage one evening. Also reversed were the two illustrations at the top of page 5; the rebuilt car is of course, at the left.

CLASSIFIED ADVERTISEMENTS.

4/- per inch.

Model Engineering.

Castings for Locomotives, Petrol Engines, Marine Engines, small Diesel Engines. Blue Prints for nearly all N.S.W.R. Rolling Stock. Boiler Fittings stocked.

Send 2/- for large catalogue. O. B. BOLTON, 70-72 King Street, SYDNEY, N.S.W.

THE "AUSTRALIND", West Australia's crack train, and Australia's fastest and most luxurious 3 ft. 6 in. gauge express, leaving Perth, W.A., for Bunbury. The 115-mile journey is covered in 3¼ hours, including a non-stop run of 99 miles. Two buffet cars are provided, and fluorescent lighting is fitted in all cars. On this trip the loco was oil-burning U class "Pacific" No. 651. (From the collection of Mr. John Buckland.)

V.R. DIESELS for MAINLINE WORK
Construction Started

Construction has commenced at the Clyde, N.S.W., works of the Clyde Engineering Co. Ltd., of the 17 main-line diesel-electric locomotives for the Victorian Railways.

These machines are being constructed in Australia under agreement with the Electromotive Corporation, La Grange, Illinois, U.S.A., using imported diesel engines and traction equipment. The locomotives are of typical General Motors appearance, except that they are double-ended to save turning at terminals.

They run on 6-wheeled trucks of 13ft. 4in. wheelbase, the trucks being spaced at 34ft. 0in. centres. The prime mover is the G.M. 2-cycle diesel, Model 5,678, with 16 cylinders of 8½in. bore and 10in. stroke, designed to develop 1,500 h.p. The main generator supplies 600 v. d.c. to drive the six axle-hung traction motors, so that the whole weight is available for adhesion. The axle load in service order is 17.85 tons. With a factor of adhesion of 25% the locomotive develops a starting tractive effort of 60,000 lbs. and a continuous tractive effort of 45,000 lbs.

The exterior of the locomotives will be finished in Royal Blue with gold striping and lettering.

It is expected that they will be employed on specially rostered tables, including the "Spirit of Progress", to ensure that their high availability will be employed.

The cost per unit is in the vicinity of £90,000.

NEW STEAM LOCOMOTIVES.

At the time of writing, six R class 4-6-4's are in service—Nos. 700-703, 705-6. As from 2/8/51, No. 701 has been running the Melbourne-Maryborough link of the Mildura Express, and making a vast improvement in time-keeping with this heavy load.

NEW BUNKER FOR D4.

Reports that D4 class 4-6-2T, No. 256 have been converted for oil burning are incorrect, having arisen, presumably, from the fitting of a new coal bunker. This is the first time such work has been necessary and, to simplify matters, a straight-end bunker of slightly reduced coal capacity has been fitted in place of the original curved-end type.

ENGLISH AND AMERICAN NEW Q.G.R. DIESELS.

The Queensland Railways have 20 diesel-electric mainline locomotives on order.

Ten are to be built by Alco-General Electric, U.S.A., being ordered through the Australian General-Electric Co. Ltd. The remainder are to be built by the English Electric Co., and will be rated at 1,500 b.h.p., the main engine being a V-12 supercharged diesel. With a 5-ton maximum axle load, these locos will weigh 90 tons, and will have two 6-wheeled trucks.

NEW TENDERS FOR N.S.W.R.

New South Wales Railways are inviting tenders for the construction of 200 locomotive tenders having a coal capacity of 12 tons, with 5000 gallons of water.

New V.R. 2-8-2's in Service

NEW 2-8-2 LOCOMOTIVES FOR THE V.R.

Between 9th August, 1950, and 12th April, 1951, the Victorian Railways received the fifty class "N" engines, built by the North British Locomotive Co., Glasgow, to V.R. specifications.

The fifty carry numbers 450 to 499, the first being landed from the s.s. "Empire Star" and the last from the s.s. "Zealandic".

They have builders' numbers 26760 to 26809 of 1950, in number order, the diamond-shaped plate being attached to the smoke deflector plates.

Early in December, ten of this class were sold to the South Australian Railways, on which system they are the "750" class, and full particulars are set out below:—

SAR No.	VR No.	Bldr.'s No.	In service (SAR)
750 ..	474 ..	26784 ..	21/2/51
751 ..	471 ..	26781 ..	5/2/51
752 ..	477 ..	26787 ..	2/3/51
753 ..	465 ..	26775 ..	5/1/51
754 ..	461 ..	26771 ..	8/1/51
755 ..	485 ..	26795 ..	12/3/51
756 ..	491 ..	26801 ..	5/4/51
757 ..	490 ..	26800 ..	28/4/51
758 ..	494 ..	26804 ..	29/4/51
759 ..	495 ..	26805 ..	—/5/51

These engines have been allotted to Tailem Bend depot for work on the Murray Valley lines, thus releasing "520" and "620" class engines for work on the North lines, where loads are heavy and stiff grades are encountered.

No. 753, ex V.R. 465, broke its right-hand cylinder late in March when running at speed, the piston coming off its rod, and, after repairs, went into service again on the 8th May, 1951.

This engine was used for the special curve tests in January, when it was taken on the 6 chain curves on the Outer Harbour and Birkenhead wharf lines, where it was found that it rounded these curves with ease, but the tender front bogie complained violently.

The V.R. footplate men consider them to steam well, but state they will not pull on a grade, which appears contradictory; however, the S.A.R. find them excellent engines and only one small point is not liked; the back wall of the cab is too close to the reversing wheel, but the men do not mind getting off their seats to link-up, as required.

Other North British Locos

The 35 engines of class PR, 4-6-2 on the West Australian Railways, which were built by the North British Loco. Co., carry builders' numbers 26545 to 26569 and 26921 to 26930. These are W.A.G.R. Nos. 701 to 735.

The first 50 of the 70 class "R" 4-6-4 locomotives being supplied by the North British Locomotive Co. to the V.R. and being V.R. Nos. 700-769, will carry builders' numbers 26989 to 27038.

S.A.R. DECORATES LOCO FOR JUBILEE TRAIN.

RX class 4-6-0 No. 20 has been specially painted and decorated to haul the Victorian Railways' Jubilee Train on its South Australian tour.

NEW YARD DIESELS.

Closing date for tenders for the ten 600-660 h.p. diesel-electric shunters (either in whole or just the prime movers and traction equipment to be installed in locomotives constructed at Islington) has been extended to September 4 next.

S.E.C. BUYS DIESELS.

Another newcomer to the ranks of diesel-electric operators is the State Electricity Commission of Victoria. The Commission has ordered six locos from England for its Newport power stations and at the new Morwell Open Cut in Gippsland. With a six-coupled, rigid wheelbase, the locos will be identical with the Victorian Railways' F class switchers, the first of which was placed in service recently.

VICTORIAN RAILWAYS.

Experimental Car Modified.

The experimental suburban saloon type car, No. 201 BT, has been subjected to several internal modifications.

An open doorway has been cut through the solid bulkhead dividing the central compartment from the end compartment fitted with rotary ventilators.

In addition the intermediate seats have been converted to longitudinal "against the wall" seats, to provide greater standee space. With these alterations, the car now conforms to latest London Transport practice, namely, that the passenger seating in general is longitudinal, transverse seating being employed only against solid bulkheads

To give greater security to standing passengers in the vicinity of doorways, the "Sydney" type double stanchion and cross-bars have been installed, and finished in attractive white enamel.

These alterations were carried out during April of this year at Newport Workshops where the

NEW!

Rivarossi

QUALITY MODEL RAILWAYS
In HO Gauge
2-Rail — 3-Rail — Overhead

(16.5 mm. — approx. 5/8 in.)

- "HIAWATHA" Streamliner (full scale-length cars)
- Suburban Electric Train (working pantographs)
- Streamlined Railcar
- Continental Freight Train
- FIAT Tramcar and Trailer (with overhead)
- Trolleybus — self-steering (with overhead)

OBTAINABLE ONLY FROM

MEADMORE MODELS,
163 Exhibition Street,
MELBOURNE, C.1

opportunity was taken to give the exterior one coat of paint.

With the new layout, the seating capacity has been reduced from 73 to 66 and the crush load increased from 168 to 180.

NEW REEFERS FOR N.S.W.R.
200 Being Delivered.

Delivery has commenced of the new type high-speed bogie refrigerator cars, class TRC, for the New South Wales Railways.

The car is steelframed, the exterior being of steel sheeting, and the interior of waterproofed plywood; the intermediate space is packed with fibre-glass insulation. Ice is loaded through eight roof hatches.

Trucks are patented "Ride-control" bogies, and the cars have automatic drawgear, without buffers.

A total of 200 is on order, numbered 3235 upwards. They carry the red diamond for high-speed operation.

Q.G.R. ORDER OPEN CARS.

The Queensland Railways have on order 1,000 FJS 4-wheel, low-sided open wagons from Metropolitan-Cammell Carriage and Wagon Co. of England. Another 500 vehicles of the same class are to be built by Gloucester Railway Carriage & Wagon Co., also of England.

PRIVATE-OWNER CARS.

Australian Paper Manufacturers Ltd., Maryvale, Vic., have acquired a small fleet of high-capacity 4-wheel gondola cars. Of identical design with the Victorian Railways' GY class, these cars were constructed by A. E. Goodwin, Ltd., St. Mary's, N.S.W., and are lettered APM. A yellow panel on each side gives load, tare, etc., and the words: "TO BE USED FOR A.P.M. MARYVALE TRAFFIC ONLY". No 8 was seen recently in the Spencer Street Yards.

BRIGHTER CARS FOR V.R.

The following cars of the Victorian Railways' mainline steam stock have been repainted experimentally in a bright red colour: 23ABW, 17ABL, 25BW, 46APL, 45BPL.

Several of these have a grey roof and window frames.

RAILCAR NOTES.
P.E. Cars to Become D.E.

The ten Petrol-Electric cars Nos. 55-64 RM, are to be remotored by having their 220 h.p. Winton engine replaced by a 275 h.p. General Motors diesel engine. It is expected that the conversion will cost £9,000 per car. The first converted car will be in service shortly.

W.A.G.R. WANTS NEW RAILCARS.

The West Australian Government Railways are enquiring for suppliers of single-unit railcars. These are to be of four types, numbers and purpose being as follows:—

10 suburban,
2 country,
4 combined passenger and baggage,
6 yet to be decided.

S.A.R. WANT LOUVRE CARS.

South Australian Railways are seeking builders for 100 bogie louvre cars of 40-ton capacity.

THE AUSTRALIAN
ELECTRIC TRACTION ASSOCIATION

Affiliated with
The Light Railway Transport League (London)
The Australasian Railway & Locomotive Historical Society
The Electric Railroaders' Association (New York)
Association Belge des Amis des Chemins de Fer (Brussels)
Stichting Tram-Archief (Utrecht)
Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: C. L. Busch, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. K. S. Kings, 32 Hillside Pde., Glen Iris, SE.6, Vic.

or one of the following representatives:

ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND: Mr. G. C. Stewart, 74 Fowlds Ave., Sandringham, W.2
BALLARAT: Mr. W. Jack, 31 York St., Ballarat East, Vic.
BENDIGO: Mr. L. Marshall-Wood, Laanecoorie, Vic.
BRISBANE: Mr. F. A. Andrews, 35 Stephens St., Morningside, Q'ld.
CHRISTCHURCH: Mr. A. C. Bellamy, 70 Wildberry Street, Woolston. Christchurch, N.Z.
LAUNCESTON: Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary Sydney Branch, 22 Cove St., BIRCHGROVE
WELLINGTON: Mr. R. D. Grant, 15 Scapa Terrace, Karori.

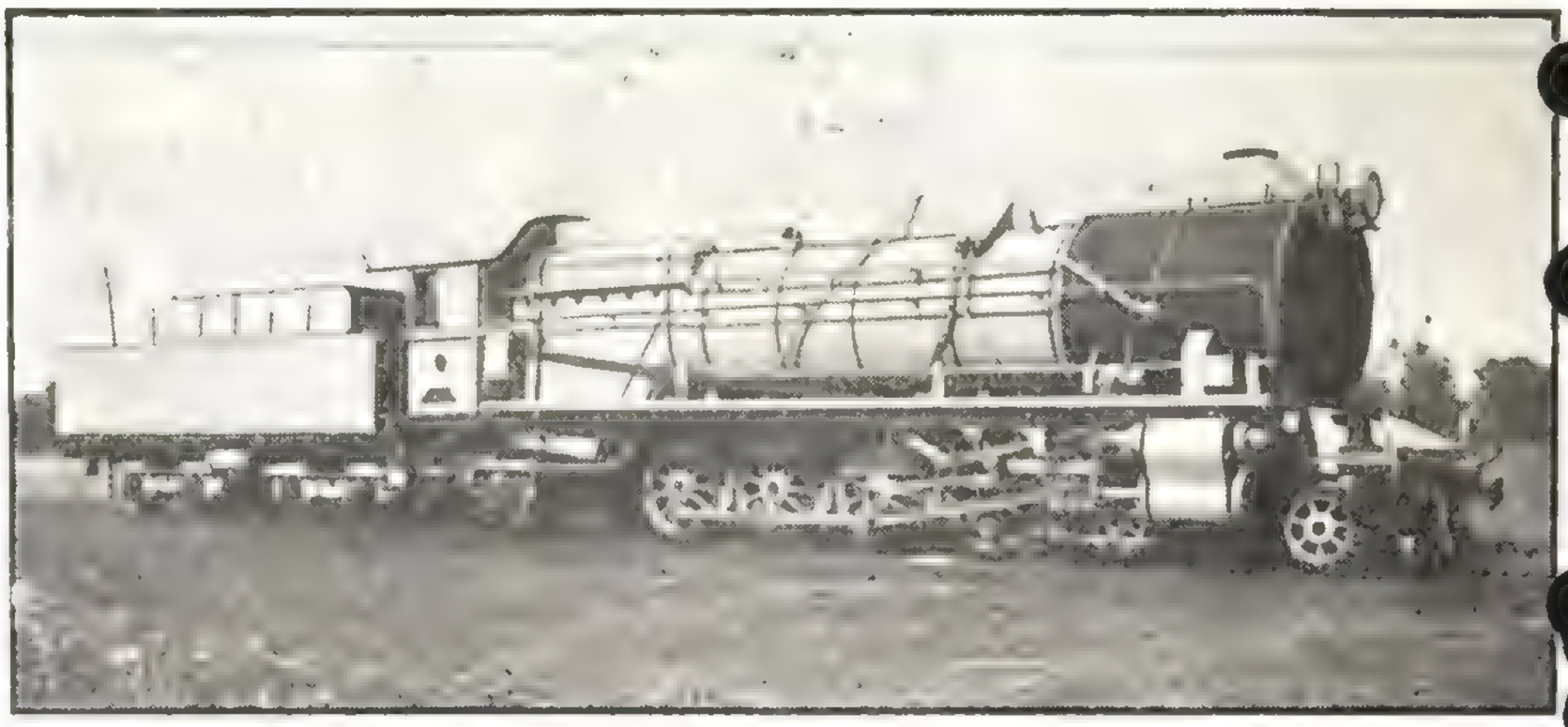
MELBOURNE BRANCH meets third Friday each month at 8 p.m. in Room 11, V.R. Institute, Flinders Street Station.

SYDNEY BRANCH meets third Thursday each month at 8 p.m. in Room 2, Railways Institute, Devonshire Street.

VISITORS ARE ALWAYS WELCOME.

ABOUT ENGINES

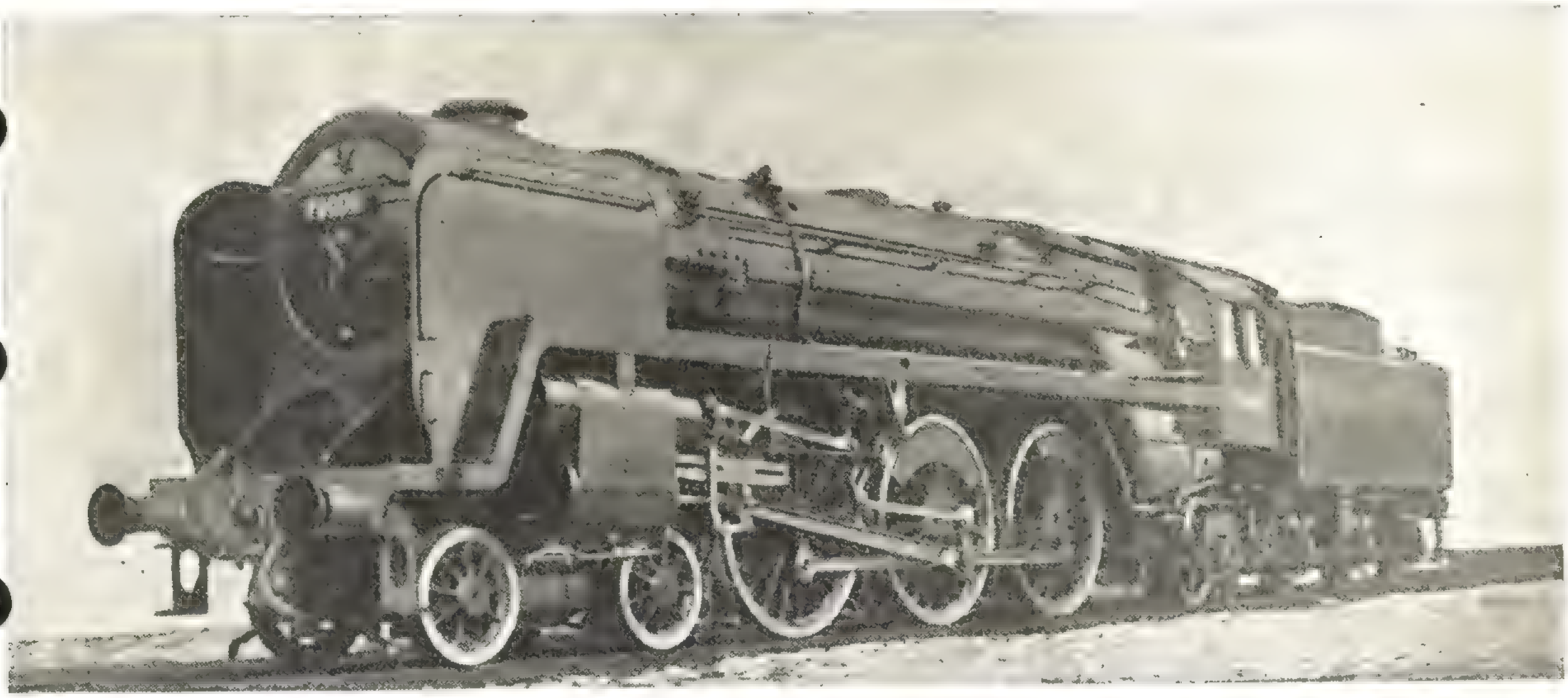
ABOVE: First of a batch of 18 new locos—8 heavy 4-8-2's for dual service and 10 medium 4-6-2's for passenger work—for the Tasmanian Government Railways under trial at the Vulcan Foundry, England. (Courtesy Launceston "Examiner".)



RIGHT: S class 4-8-2 of the 3 ft. 6 in. gauge West Australian Government Railways. With a total weight in steam of 119.3 tons, and an adhesive weight of 52 tons, these machines have a tractive effort of 30,685 lbs. at 85 per cent. boiler pressure. Actual boiler pressure is 200 lbs., cylinders are 19 in. diam. x 24 in. stroke. Total heating surface is 1,673 sq. ft., and grate area is 40 sq. ft. Nine tons of coal and 3,500 gallons of water are carried. (W.A.G.R. Photo, reproduced by courtesy "Truck & Bus Transportation".)

BELOW: 2 ft. gauge Shay of the Moreton Central Sugar Mill, Nambour, Qld. This powerful little engine formerly belonged to the Mapleton Tramway. Wal Lane took the photo on 8/5/51.

OVERSEAS ITEMS



Upper picture shows "Britannia", No. 70000 of British Railways. This massive Pacific is intended for medium express work, such as is now performed by modified "Royal Scot" and "West Country" classes, and is the first of the new standardised locomotive fleet.

Our second illustration is of a Chesapeake & Ohio 8-wheel switcher, a striking answer to those who say that only diesels are suited for yard work.

NOT ALWAYS DIESELS!

The illustrations reproduced on this page (by courtesy of the Victorian Railways' Publicity Department) should please those readers who have complained that our overseas page had too much to say about diesels.

Actually, of course, diesels have tended to sweep the field in the United States. Half of all locomotives in service at the end of 1951—16,000 of them—will be diesels, and several railroads have been completely dieselized. Even on the largest railroads, whole divisions have been turned over to diesel power. However, steam locomotives are far from finished. There are still several major railroads without a single diesel locomotive; the Norfolk and Western is the most noteworthy, particularly for the spectacular success it has achieved by treating its modern steam engines with the thought and care lavished on diesels, but rarely, if ever, on the less glamorous steam locomotives. Schedules have been rearranged, as with diesels, to make use of the maximum availability of the steamers, and that availability has been increased amazingly by streamlining the servicing between runs, and by fitting every modern device for improved steaming. Results compare more than favourably with equivalent diesel operation on other roads. On the other hand, big roads, such as the Santa Fe, have found diesels to be the answer to many problems, particularly that of operating through long stretches of waterless desert or in areas where the water supply is unsuitable for locomotive use.

The Korean war has had the effect of halting the scrapping of steam locomotives. The New York Central, which has placed the largest diesel order in railroad history, is also putting through a huge programme of modernising its steam locomotives.

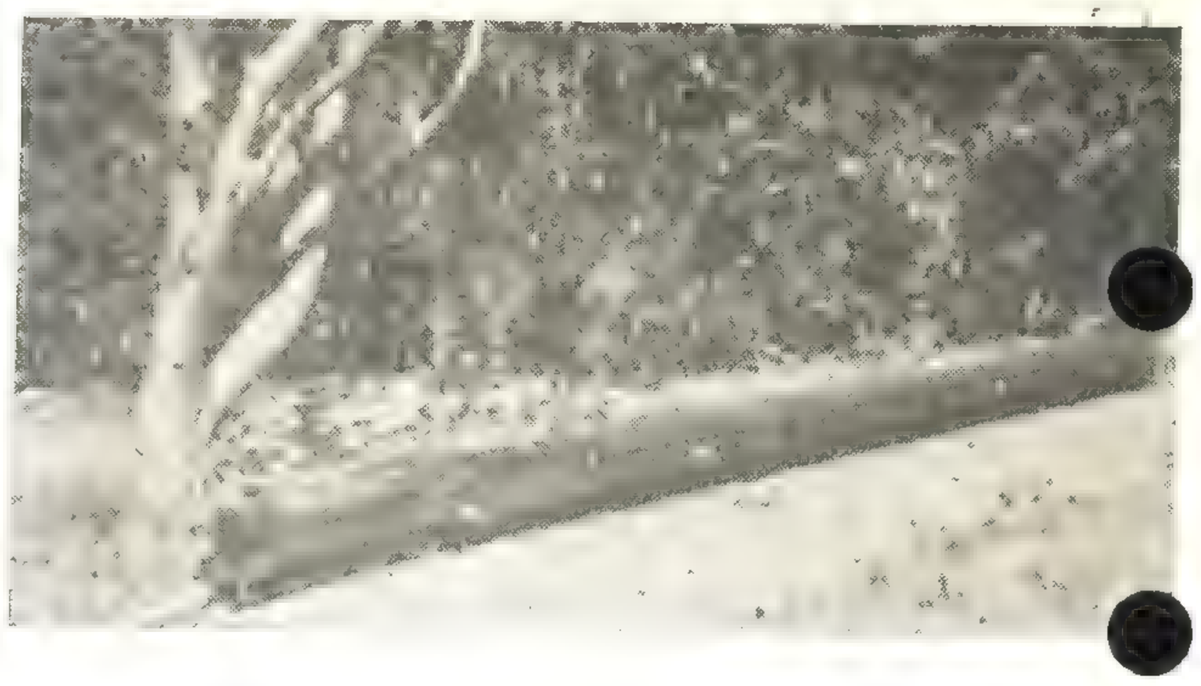
Although few, if any, steam locomotives are on order from private builders at the moment, at least two roads are building their own—a fact overlooked in most statistics on the subject.

STEAM FOR BRITAIN.

In Great Britain, as in many other parts of the world, the steam locomotive is supreme, and supremely efficient, and looks like remaining that way for many years yet. In many cases electric traction is the biggest threat, not diesels, principally because of the lack of oil in Europe, Africa, Australia, and other places.

MODEL RAILWAYS in Australia

ELECTRIC - STEAM - CLOCKWORK
ALL GAUGES
Contributions Invited



How to Handle Whitemetal Castings

By K. N. Lowry

PAINTING

Molds and dies usually are lined with carbon, plumbago, or some similar agent to prevent the castings sticking in the die; and some of this agent must adhere to the casting. Also, during their travels between factory and eventual home on a car or loco, castings—and, for that matter, sheet brass and other materials—acquire a coating, often invisible, of chemicals and sundry foreign matter. This coating often may be an unsatisfactory base for paint, and should be removed or neutralised. Therefore, before painting, any metal, casting or otherwise, should be washed with vinegar or petrol.

With the job chemically clean, it is ready for painting. Standard painting practice recommends an undercoat, but except for brass—notoriously bad for holding paint—on most of the small parts used in model work, a good quality paint may be used both as undercoat and finishing coat. If an undercoat is used, I have found Duco Grey Primer Surfacer very satisfactory, and recommend its use on the larger surfaces, such as locomotives.

Unless one possesses a spraying outfit, or uncanny ability with the brush, Lacquers are good things to avoid. They dry too quickly, cannot be toyed with like ordinary paint, and for the average man they mean One Big Mess. It is better to curb your impatience, and settle for the slower-drying paints, with which one can play around without leaving a trail of lumps and brush marks. In real practice, locos and rolling stock, except for the crack fliers, are flat as a board—and even the high-gloss passenger stock of the crack trains only corresponds to an eggshell flat, by the time it is toned down to the correct relative appearance for model work—so, in general, dead flat paints give the best effect for model work. Use flat paints on all equipment, and in the case of your crack passenger, apply a final coat of eggshell flat varnish.

If you cannot obtain a flat paint, or an undercoat (which is flat, and may be used both as undercoat and finishing coat) in the colours you want for your equipment, you may make your own flat paint from ordinary gloss paints, as used for the exterior woodwork of houses. This paint derives its gloss from its content of linseed oil, which can be removed from the paint by the following process:—Before stirring the paint, pour off about one-third of the contents of the can, into a spare clean can (for use on some other project where gloss doesn't matter). Fill the can with PURE turpentine (not Mineral Turps), and stir thoroughly, then leave for a few hours. Again pour off the top layer before stirring—this time it consists of linseed oil, cut by the turps from the pigment, and the turps and linseed are at the top, with the pigment underneath. Add more turps and stir until the paint has the desired consistency. The resultant paint consists mainly of turps and pigment, and is quite flat.

Many fine models have been spoiled by the paint job, yet one does not need to be an artist to do a good job of painting a model. It seems that some modellers are in too much hurry to get the car or loco finished, and on the tracks, and the paint job is rushed through as a necessary evil, when it should be regarded as the frame to set off your masterpiece—or the cloak to hide the mistakes. In either case, you will get more satisfaction from a neat finish, and it is worth the little extra patience required. A good theme to remember for painting is that two thin coats give a better job than one thick coat, and three light coats are better still. Remember, too, you spent a lot of time making that car or loco; you expect it to give you years of service. That means also that you will be looking at it for years, and you don't want to be gazing sourly at it in a few months' time, when the excitement has worn off, and you can see every blob, bare patch, and brushmark glaring at you. Isn't it better to spend a couple of extra nights in careful finish?

TRUCK ASSEMBLY.

The BPR method of spring-loading bogies was covered in an article which appeared in October 1947 Model Railroader, and a blueprint covering the basic method is available commercially. However a number of modellers don't subscribe to the American publication, and the blueprint, of necessity, cannot cover the finer points as effectively as an article, so it is my intention to cover the subject fully in "R. in A." at a later date. In the meantime, as I often receive queries on some features not covered fully in the blueprinted Data Sheet, I will give some hints on these matters.

BPR Trucks or Bogies are designed primarily for spring-loading, and the side frames have lugs cast on to the back expressly for this method of assembly. For those who prefer it, the trucks can be assembled with a rigid bolster, and this method seems to be favoured by many HO men, as the need for springing or equalising in HO does not seem to be as desirable for smooth operation as it is in O Gauge.

The axle holes in the side frames are cored to the correct depth required for N.M.R.A. standard axles. There is a slight taper in the hole for casting purposes, and before use, the axle holes should be reamed to make a free-rolling bearing for the axles. This reaming may be done with a twist drill held in a pin vise or the chuck of a hand drill. For O Gauge, use No. 40 Drill (.098 in.) and for HO, use No. 51 Drill (.067 in.).

The side frames and bolsters are designed in accordance with the N.M.R.A. Standards. This means that the side frames are spaced the correct distance apart for using Standard wheels, and when the correct diameter of wheel is used for the particular bogie, the centre and side bearing pads are at the correct standard height. While wheels other than N.M.R.A. Standard may be used if preferred, in such cases the height of bearing pads may be altered, and adjustments may have to be made in the

side frame spacing to accommodate the non-standard wheels.

For spring loading, the Model Railroader article and the blueprint show a metal screw with a short length of thread and a smooth upper shank. This is, of course, the ideal screw for the job, as there are no threads to foul the spring or truck bolster when the bo'ster is depressed; but while supplies of same may be readily obtained overseas, in recent years they have been almost non-existent in this country. However, there is no need to tramp town searching for elusive smooth-shanked screws. The fact is that a suitable size of nail or escutcheon pin, soldered in place, will do the job just as effectively. For those who prefer screws to soldered nails, a fully-threaded screw—3/32 Whit. or 8 BA in O Gauge, 1/16 Whit. or 10 BA in HO Gauge—will work quite well. The only proviso is that the screw should be installed so that it is perpendicular, as otherwise it will tend to jam the spring.

Theoretically, the threads on the screw will prevent the truck bolster and spring from riding freely; and although I have made them so that they will depress as easily as if a smooth shank screw was used, in general it could be said that a truck fitted with threaded screws could not be depressed to the full extent of the spring with the same ease as with a smooth-shanked screw. However, in actual working on a car, the bolster does not depress more than 1/64 in. under the weight of a car, therefore whether the spring will bind at full depression is of no consequence. As long as the spring can be depressed 1/64 in., the bogie will be efficiently sprung and equalised. As further assistance when using fully-threaded screws, drill an ample clearance hole in the bolsters for the screws to pass through—No. 40 drill for O Gauge, No. 51 drill for HO.

The spring wire braces soldered across the bottom of the bogie are the keystones of the assembly. They hold the frame square and rigid, and at the same time, being flexible, allow independent equalisation. Phosphor Bronze wire is preferable, 21 Gauge being suitable for both freight and passenger bogies. Steel piano wire is harder to solder, but is cheaper and easier to obtain, generally in 20 and 22 gauges. Use 20 Gauge on passenger, and 22 Gauge on freight bogies.

The method of assembly is to install the truck bolster, metal screws and coil springs, together with the wheels, then invert the bogie and solder the two spring wire braces in place. As best results will come from a neat job, with sideframes parallel and perpendicular to the axles, it is worth the while of any modeller to make himself an assembly jig. This does not need to be elaborate —all that is necessary is to drive a few nails in a piece of wood, so that the side frame will be held in proper alignment. Remove the heads of the nails so that the bogie may be removed from the jig after processing. The important thing is to take a little time and care, to ensure that the jig holds the bogie squarely. This will leave your two hands clear to handle the soldering of the wire braces, and the time spent in jig-making will pay you dividends in easier assembly and smoother rolling trucks.

Before soldering, cut diagonal notches in the bottom of each side frame, with a hacksaw blade or file, in which to locate and partly recess the wire braces. To avoid defacing the front appearance of the side frame, start the notches a little back from the front face, and taper them towards the rear of the side frame. Cut the wire braces to length, tin them at each end, lay them in the notches, flux, and solder in place.

For rigid assembly of bogies, the wire braces are not required. The truck bolster is fitted under the side frame lugs, and either screwed or soldered into place. If solder is used, it is suggested that only one side be soldered, and the other screwed. Even in the best of railways, it sometimes becomes necessary to replace or service wheels, and if one side is screwed, the bogie may be dismantled without the need of a blowlamp or solder iron.

BOOK REVIEW.

"Scottish Railways", by O. S. Nock. (London, Thos. Nelson & Sons, Ltd.)

The fourteen colour plates which adorn this handsome volume include some of the finest paintings of locomotives we have yet seen; the sixteen black and white illustrations are also well worthwhile. Adequate statistics are provided, yet Mr. Nock never fails to write in a most absorbing manner, whether of the grand days of history or of the soberly efficient present. Such subjects as Train Control in Scotland are covered, but, for our part, the description of the West Highland line was first favourite.

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MAYFIELD LINES

By L. A. Clark

2.—TIMETABLE WORKING

(Continued)

In this instalment, Mr. Clark continues his description of methods used for timetable operation on the Mayfield Lines (O Gauge). It will be noticed how closely full-size practice is followed.

If it is proposed to run any trains at regular times, it is advisable to insert these first. On the Mayfield, the electric services are dealt with first. With one train, a 30-minute service can be given between Mayfield and Brookvale, journey time being eight minutes. The second train, brought out during the peak periods, will enable a 20-minute headway to be maintained. These trains all stop at Cammeray and Norwood, run on the suburban line, and are tabled at symmetrical times, and although it is not standard practice, it is an advantage to graph them in a distinctive coloured ink. The next to be graphed are the steam suburbans, Mayfield to Wallsend, time of journey, eleven minutes, allowing for two intermediate windings. With one train in operation, an hourly schedule can be comfortably maintained, with a fair amount of standing time at each terminus. Using a second train in the morning and afternoon peak periods, a service at 30-minute intervals can be given, also at symmetrical times. These trains run on the suburban line and stop at all stations except Cammeray.

Now the plotting of the country passenger, express and goods trains will be undertaken, and in this connection it is very necessary to make certain that engines and cars are available at the points required for all trains tabled, as it would be most disconcerting, when attempting to put the table into operation, to find no stock on hand to form a train. This predicament has arisen more than once on the Mayfield Lines, not because of errors in compilation, but owing to the very late arrival of a down train which was required to form the following "up" and vice versa. Therefore it is advisable to provide for sufficient standing time at terminals to allow the untoward eventualities of the kind mentioned.

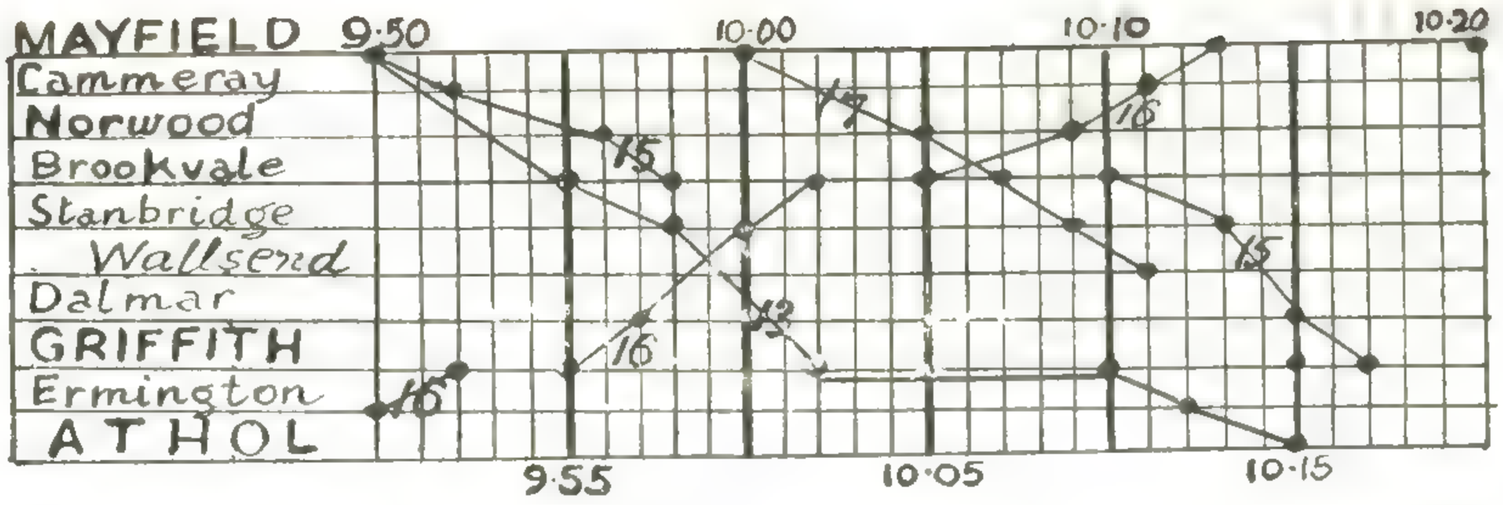
To ensure that engines and cars are on the spot at the right time, the following method is recommended. For every engine and item of rolling stock not used in working the trains already graphed, a piece of white card may be taken, and the number of each engine, and the code letter of each car or waggon, written

thereon. A close-coupled set would be represented by one card only. A large sheet of paper is now taken (newspaper will do), and marked off in divisions to represent the places where it is proposed to stable engines and vehicles, and the cards distributed among them as desired. Suppose the first train to be dealt with is one from Mayfield to Athol, the cards representing the loco and cars composing the train are picked up from the Mayfield square on the large sheet and placed in the Athol portion, and at the same time the course of the train is marked on the graph and its composition, make-up or consist, call it what you will, pencilled in to facilitate the writing up of the section working t/t's later.

If this procedure is followed with every train which is run, it is possible to see at a glance, at any time during the working out of the graph, the whereabouts of all rolling stock, and prevents the likelihood of tabling a train for which the necessary components are not available at the required time and place.

At this stage it may be advantageous to have a look at the piece of graph illustrated. It will be seen that trains Nos. 13 and 15 are both tabled to depart at 9.50. No. 13 runs on the main line, first stop Brookvale, thence Stanbridge and Griffith, where eight minutes are allowed for a change of engines. This change is quite unnecessary, but is in keeping with departmental procedure. It arrives at Athol at 10.15 after being 25 minutes on the road. No. 15 is an electric running on the suburban line and stopping at all stations to Brookvale, where there is a steam train connection for Griffith, which also stops at all stations. This in turn, connects with a railmotor for Athol leaving at 10.20 (not shown on graph). On the up journey, No. 16 has left Athol at 9.47 as a rail motor connecting at Griffith with an all-stations steam train hauled by a tank engine which connects at Brookvale with an electric for Mayfield arriving there at 10.13, 26 minutes after the departure of the original rail motor from Athol. No. 17 is a steam suburban worked by a 13 or 30 class engine with a three-car set, first stop Norwood, thence all to Wallsend.

(To be continued)



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LETTERS to the EDITOR

DIESEL CONTROVERSY

The Editor,
Railways in Australia.
Dear Sir,

With the Diesel-versus-Steam controversy raging in "R. in A.", I should like to have a say.

As a keen railfan, I must say that the greatest single factor in fostering my deep interest in railways — and I'm sure that it's the case with most other railfans, too — was that magnificent, fascinating mass of steel, the steam locomotive.

The lonely, heartrending wail of the chime whistle in the distance, the staccato beat of the exhaust as the drivers grapple with the grade, the "chug-chug" of the air pump filling the train-line, and, above all, the sight of a Pacific running at speed, smoke trailing back along the train, and the white feather of steam fanning out from the safety valves. These everyday characteristics of the steam engine have made it beloved, and, when they are taken from us and replaced by a sleek-looking automobile on rails, resplendent in bright colours, and purring like a cat, we're naturally not going to like it, and will feel that a lot of the glory and romance has gone from railroading. But, perhaps, fellow railfans, that is Progress, perhaps it is inevitable, and certainly none of us owns or operates a railway, with fuel and maintenance bills to pay. So this interloper must have the edge on the steam locomotive in performance, and, in the long run, economy, or else they would not be purchased at huge initial cost by railways the world over.

I should like to say to Mr. Boland (R. in A., 12/50) that the diesel would have a decided advantage over steam power in mountain working, because of its ability to develop a high tractive effort at low speeds. I venture to say also that the 10-coupled Garratts he suggests may have too long a rigid wheelbase in two parts to be suitable for the numerous curves on the Hills section in South Australia.

Another big factor in the tremendous advance of the diesel in U.S.A. is the fact that the price of coal has kept ahead of the price of oil in that country. Consequently the management of a railroad finds that $100 will go further in the tanks of a 4000 h.p. diesel than in the tender of a 4-8-4, so diesels it is! But I hasten to add, modern steam power, if fired with the dearer, better-class coal, will turn in a much better performance, and more comparable with the diesel. Owners have insisted on the cheaper, poor-quality coal, and thus, inevitably, the efficiency of the steam engine has been lowered.

Now a word to Mr. Rowe (R. in A., 1/51). I am certain that if supplies of Maitland coal were assured, the Victorian Railways definitely would not have converted the S class engines to burn oil, and possibly not the A2 and C classes either.

I hope no one gets the impression from this that I am a diesel fan. But, looking facts squarely in the face, it seems that our first love, the reciprocating steam engine, is on the way out, and that a more modern machine is coming in. I, for one, will feel much less enthusiastic about railways from the viewpoint of motive power when King Steam is finally dethroned.

Yours, etc.,
L. F. HOLMES.
Seymour, Vic.

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OUR FAN MAIL

L. H. SMART, Murrumbeena, [illegible].—Type of thing you wanted appeared in our last issue. Hope to be able to keep it up. Loco book held up by high present day costs and paper scarcity. Thanks for comments.

A. E. WATSON, Bentleigh, Vic.—Much appreciated, thanks.

A. N. FOUNTAIN, Princes Hill, [illegible].—Prints of 3ft. 6in. shots would be most welcome. Fairly well supplied with the larger gauge at present.

W. J. FURPHY, Dandenong, Vic.—Hope you like the increased supply of your favourite this issue. Thanks for good wishes.

D. D. HAGARTY, Eastwood, N.S.W.—An interesting comment; I think the proportions in this and the last issue are much as you suggest.

N. E. DIX, Nabawa, W.A. — You certainly move around! Do these places certainly move around! Do these places have any railways? They would be of interest to readers.

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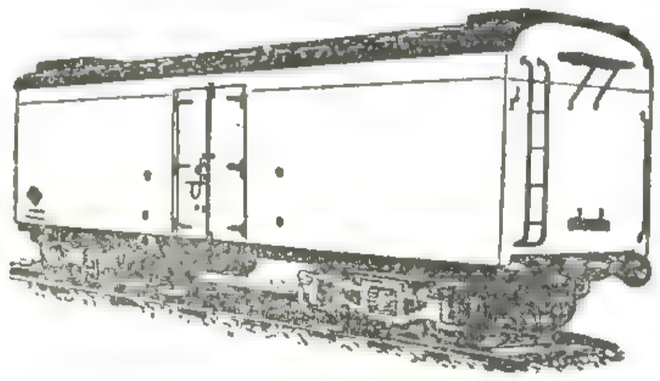

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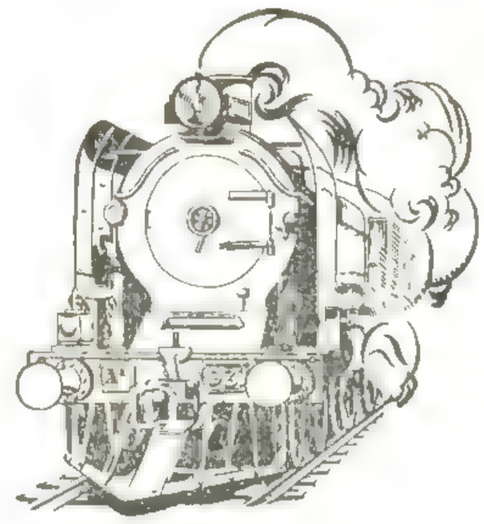

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B.P.R. parts are available at leading hobby shops in Melbourne, Sydney, Brisbane, Adelaide, Perth.

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RAILWAYS IN AUSTRALIA

1/3 MONTHLY

The Magazine about Australian Trains

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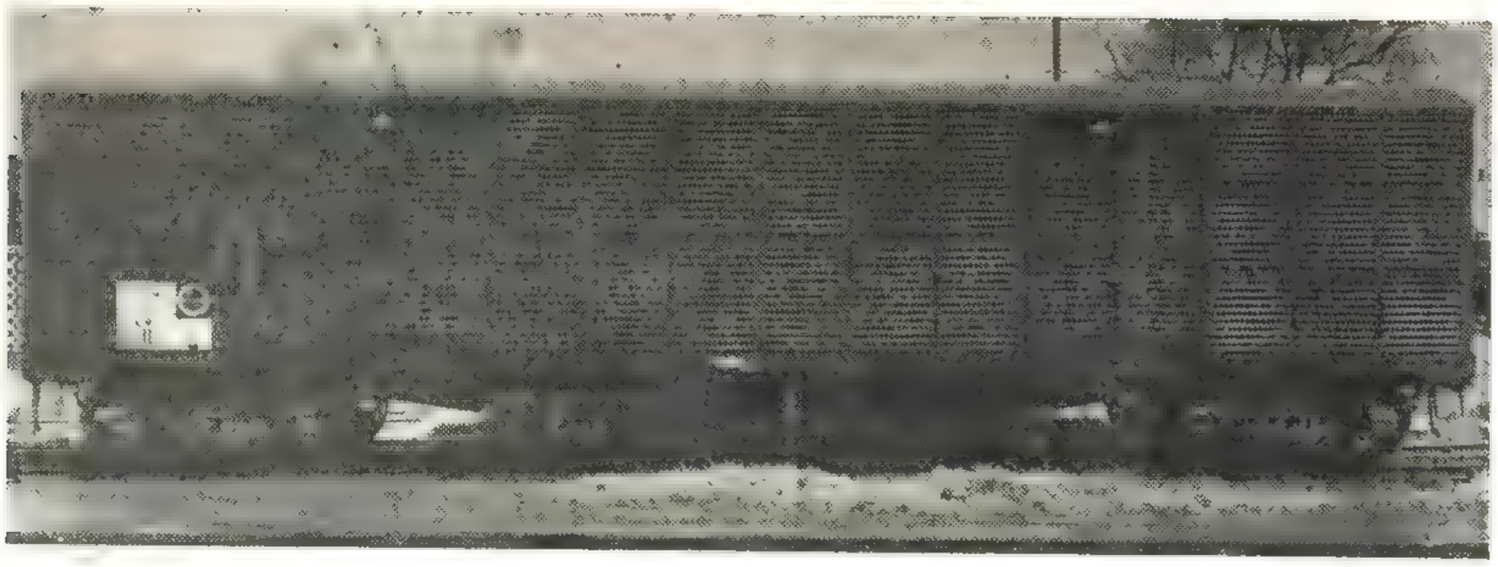

NEW FREIGHT CAR

All-steel 45 ft. bogie louvred van, one of 300 built by the Birmingham Railway Carriage and Wagon Co. Ltd., for the New South Wales Railways. (See news item, this issue.)

N.S.W.R. official photo.

From Your Editor —

Dear Reader,

Bertie Wooster, the famous P. G. Wodehouse character, once remarked that, in telling a story, he never knew how much explanatory stuff to include. Newcomers always complained of insufficient background, while old hands insisted that there was too much. It seems to be the same with us, for we still meet or hear of readers who fail to realize that this is a spare-time labour — and a labour of love, for "R. in A." has never paid its way since the day that it was born!

Despite the struggle to keep going—at times almost an impossibility—we still manage to arrive; this month we are rather late as the result of an editorial visit to Sydney, and other time-consuming activities, but we hope to be with you again rather sooner than usual next month. "Double-barrel" dates are still the order of the day, but, with your continued support, they will soon be a thing of the past.

To keep the magazine going, renew your subscriptions promptly as they fall due (we'll remind you!). If you haven't a subscription already, take one out now, and get your friends to do likewise.

And, especially, don't forget to mention "Railways in Australia" when writing to or calling on our advertisers.

Yours sincerely,

THE EDITOR.

PUBLICATION DATE

Although dated "June-July" to preserve continuity, this issue was actually published in September; news, etc., has been included up to the latest date prior to publication.

OUR COVER PICTURE

This month's cover suggests that there are more reasons for travelling by train than mere enthusiasm for railways. However, much as we regret to disappoint you, the young lady boarding the air-conditioned car (on one of several "Daylight" express trains of the New South Wales Railways) was doing so purely for publicity purposes. However, travel by train and keep hoping!

Our thanks go to the NSWR Public Relations Department for the picture.

WHERE IS KALKALLO?

The "Age" photographer who took the attractive snow scene used on last month's cover said that the train was "near Kalkallo". There is no station of that name on the Victorian Railways and the usual route for Kalkallo is via Donnybrook on the Northeastern line which is certainly not that illustrated. We are inclined to think that the line concerned is the Whittlesea branch, which runs within a few miles of Kalkallo. The train would then be the Whittlesea Goods, hauled by a D3 4-6-0 locomotive.

DIESEL ELECTRICS

Will They Save Australian Railways?

Australian railway systems are facing a problem of terrifying proportions. Carrying more traffic than ever before; unable to handle all traffic offering; they are nonetheless worse off financially than ever before. Until recently, there seemed no obvious solution to the problem. Now, the diesel advocates claim that these powerful but uninspiring machines can and will revolutionise the situation. This and other aspects of dieselisation will be discussed in our next issue.

Clyde Engineering Co.

Other items will include an account of activity at the Clyde Engineering Co's. works — largest Australian locomotive manufacturer, in addition to a further instalment of "Holiday by Rail", and other popular features.

More News Next Month

ELECTRIC TRACTION IMPROVED

As from the September issue, now on sale, "Electric Traction" is printed throughout. This magazine can be obtained for a subscription of 13/6 yearly.

Sample copies can be obtained for 1/3 each, post free.

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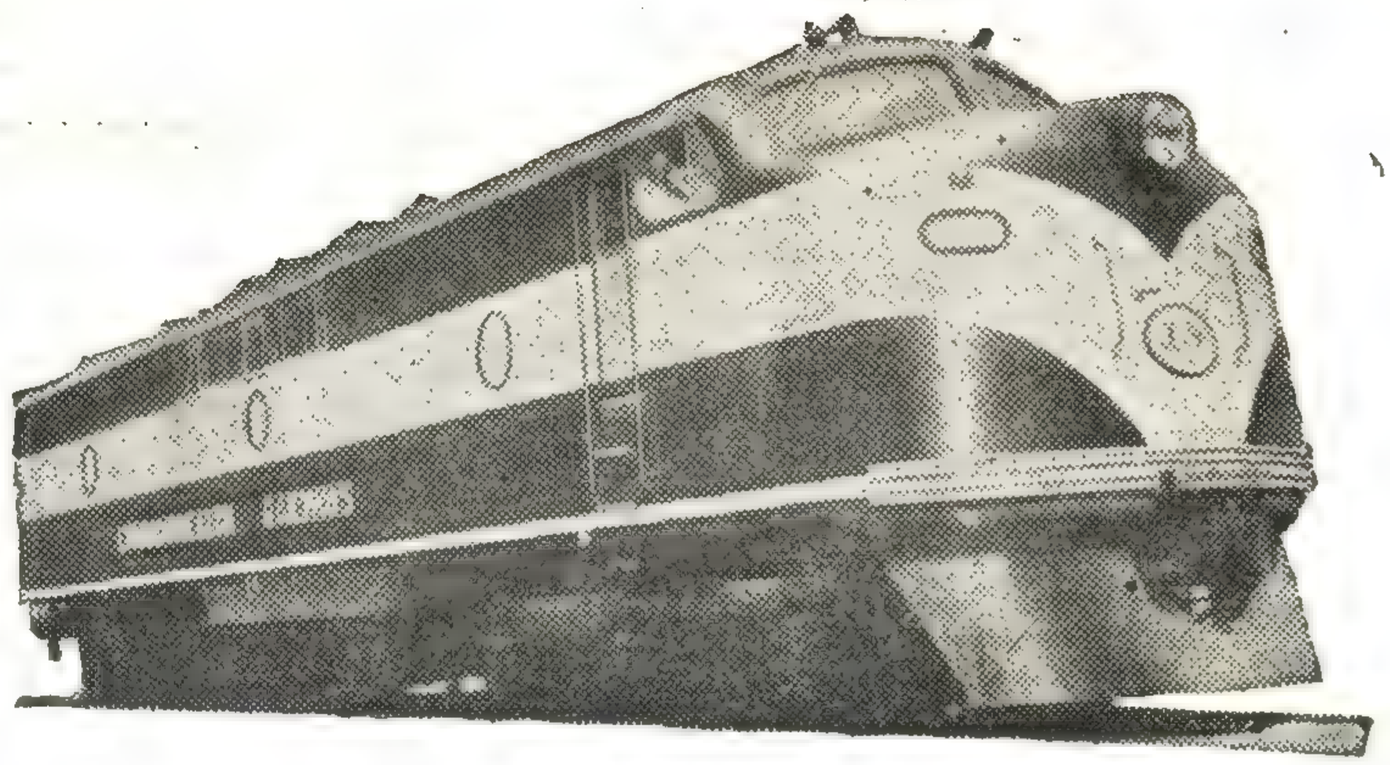
FIRST AUSTRALIAN-BUILT MAINLINE DIESEL-ELECTRIC LOCOMOTIVE

Clyde Engine Tested Successfully



A major step forward in the modernising of Australian railway equipment took place on Friday, August 24th, when The Clyde Engineering Co. Pty. Ltd., Granville, N.S.W., sent on its initial test run to Penrith the first Diesel Electric Locomotive built in Australia.

These ultra-modern locomotives are being built by Clyde in association with the General Motors Corporation, U.S.A., which is supplying the power equipment, transmission and controls, and is lending technical assistance in the initial stages of production.

The locomotives are powered by a 1,500 H.P. Diesel Engine, weigh 108 tons, and have a maximum speed of 90 M.P.H. The maximum tractive effort is 50,000 lbs.

The Clyde Engineering Company plans in the future to extend progressively the Australian content of the locomotive to the point where only the Diesel engine and generator will be imported from the United States of America.

The initial locomotives produced by Clyde will be used on the Trans-continental Railway from Port Augusta to Kalgoorlie.

Following the completion of eleven of these locomotives for Commonwealth Railways, twenty-six generally similar locomotives will be built for the Victorian Railways Department. The total value of the thirty-seven main line units at present on order is in the region of £4,000,000.

The introduction of Diesel Electric Locomotives to the Australian Railways Systems follows the outstanding success of this type of rail haulage in North America, where the building of steam locomotives has almost ceased.

The general characteristics of the locomotives being built by Clyde Engineering are similar to those produced extensively by General Motors for the American Railway Systems. The Electro-Motive Division of the General Motors Corporation is the largest manufacturer of diesel locomotives in the world, and supplies approximately 80 per cent. of the American market. The Division produces ten locomotives per day, and recently completed its 10,000th unit.

The production of the first Australian built locomotive has been achieved in 108 working days from the issue of the first drawing.

A distinctly modern feature of this locomotive is the provision made for the comfort of the crew. The driver's cabin is attractively built and nicely finished, providing excellent vision through twin windscreens. The crew is seated in leather upholstered swivel-type chairs having armrests and being designed to avoid fatigue. Immediately in front of the driver's seat is his instrument panel — closely resembling the dashboard of a modern motor vehicle — and the modern fingertip controls are so placed as to require the minimum of movement and effort. The crew's quarters in the locomotive provide toilet, washing and locker accommodation; and have an electric water-cooler and facilities for heating of food and water.

The end result of this outstanding effort on the part of The Clyde Engineering Co. Pty. Ltd. and its Australian craftsmen has evoked universal admiration. The American experts who have co-operated in the project have paid high tributes to the management and workmen responsible for this addition to Australia's industrial and transportation potential.

N.S.W. RAILWAYS

New Air-conditioned Train

The Commissioner for Railways, Mr. F. C. Garside, announced on 25/9/51 that modern air-conditioned trains were being placed in service as Central West Expresses to operate in each direction between Sydney and Orange from Mondays to Saturdays, and to extend to Parkes and Dubbo three days weekly.

On Monday, 8th October, a seven-car air-conditioned express will leave Sydney for Parkes at 8.30 a.m. and will continue this service on succeeding Mondays, Wednesdays and Fridays, and will provide return services on Tuesdays, Thursdays, and Saturdays as from Tuesday, 9th October, until another eight-car air-conditioned train is available.

On Tuesday, 9th October, an eight-car air-conditioned express will leave Sydney for Dubbo at 8.30 a.m., and thereafter will continue this service on succeeding Tuesdays, Thursdays and Saturdays and will provide return services on Mondays, Wednesdays and Fridays as from Wednesday, 10th October.

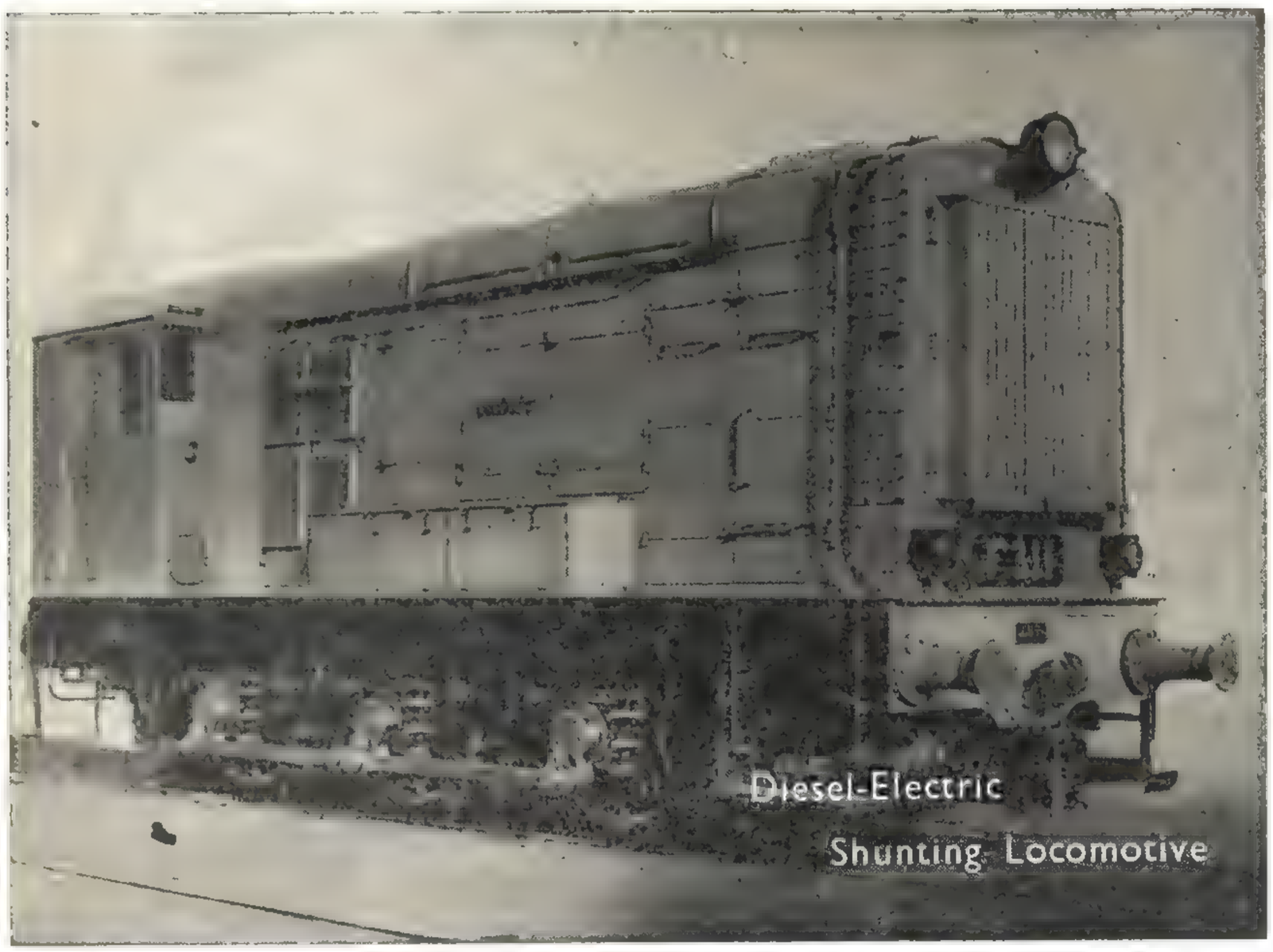
These trains are similar to the eight-car trains operating as Riverina Expresses between Sydney and Albury and as Northern Tablelands Expresses between Sydney and Armidale, and to the seven-car trains operating as Newcastle Expresses between Sydney and Newcastle, and as the South Coast Daylight Express between Sydney and Nowra. The principal differences between the two types of train are that the eight-car train has a buffet-diner car in which hot meals are served, and the seven-car train has buffets from which light refreshments are obtainable by means of a tray service.

A rail motor service will be provided between Parkes and Forbes to connect with the air-conditioned Central West Express operating between Sydney and Parkes. The rail motor will leave Parkes for Forbes at 6.15 p.m. on Mondays, Wednesdays and Fridays, and will leave Forbes for Parkes at 9.05 a.m. on Tuesdays, Thursdays and Saturdays.

Seat reservation is necessary on the air-conditioned Central West Expresses, and bookings may be made up to 14 days in advance of the day of travel.

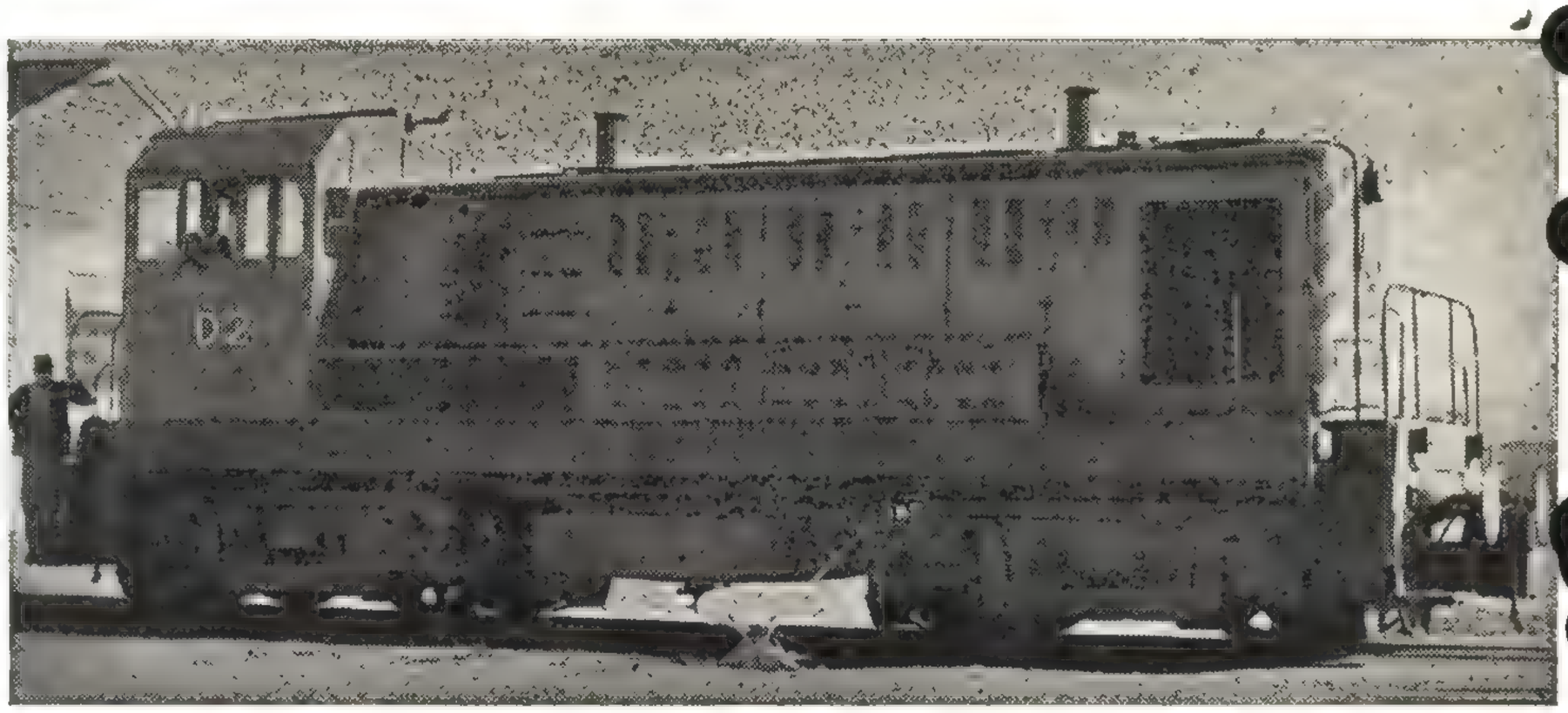
Mr. Garside also announced that arrangements had

ABOUT ENGINES



Diesel-Electric Shunting Locomotive

Of typical British design the F class 0-6-0 diesel-electric switches of the Victorian Railways are now in service in and around Melbourne. Others will be sent to country centres. Designed for both switching and transfer work, they are reported as being rather underpowered for the latter, but most satisfactory in yard work at North Melbourne. The rigid wheelbase and coupled wheels permit simpler drive arrangements and larger electric motors than with the more common B + B wheel arrangement. Clean, comfortable cabs, and ease of control have made the new engines popular with crews. 10 are being supplied by the English Electric Co., all of 350 h.p. Our illustration shows No. 311 in its original coat of grey; as outshopped from Jolimont Workshops, the F's appear in glossy black with red frames. (VR Photo.).



Photographs do not do justice to the diesel-electric locomotives introduced last year on the Port Kembla-Mt. Nebo coal railway by A.I. & S. Ltd. With a maximum tractive effort of 57,000 lbs., these sturdy machines can haul 3,000 tons on the level; from a standing start, 1,400 tons can be hauled up a 1 in 70 grade. (B.H.P. Photo.).

been made to exhibit the eight-car Central West Express and a new four-car air-conditioned diesel train at Regent Street Station (previously the Mortuary Station), near Railway Square, Sydney. These modern trains may be seen from 9.30 a.m. to 5 p.m., 29/9/51 to 1/10/51. Mr. Garside cordially invited all interested to view this exhibit.

N.S.W.R. MAINLINE DIESELS DUE SOON

The first of the 1,760 h.p. mainline diesel-electric locomotives ordered by the New South Wales Railways from the American firm "Alco" was due to arrive in September. This date is not likely to be met, but preparations for the arrival of these machines are well in hand. Two bays of the paint shop at Eveleigh workshops have been taken over for the big diesels which will be the most powerful in Australia.

It is expected that the new engines will be used on the Melbourne Limited and Brisbane Limited expresses.

TASMANIAN RAILWAYS
Speeds for Diesels

The new diesel-electric mainline locomotives of the Tasmanian Government Railways (3 ft. 6 in. gauge), the 660 h.p. X class, are capable of a maximum speed of 55 m.p.h. For the present, however, they are restricted to the speeds permitted for steam locomotives—45 m.p.h. on passenger trains, and 35 m.p.h. on freights. Much higher speeds were experienced at one time, but a spectacular accident to a passenger train on the Main Line brought the severe restrictions.

BACK TO STEAM NEXT MONTH.

Those of our readers who think that there is too much about diesels this month will be pleased to learn that our next issue will have plenty about steam engines. The new Q.G.R. Pacifics, and the V.R. 4-6-4 will be covered in detail.

RAIL OR ROAD?

The article on this page was published in the magazine of the West Australian Government Railways Institute. We have commented previously on the sound approach made by that journal to present-day problems, and this article is no exception.

The Rail v. Road controversy is becoming historical. Nevertheless, demands for rail transport still continue to mount higher and higher, far in excess of the railways' capacity to carry, and meanwhile the patient pedestrian continues to thread his way through ever-increasing bus queues on the public footpaths; negotiate crosswalks and intersections with an ever-increasing nervous tension and rising hostility towards the titanic freighters which constrict his right-of-way, while the motorist timidly hugs the kerb to give them passage.

It is significant that Rail, which builds and maintains its own highway, can withstand the competition of both Sea and Air, which enjoy a free, though monopoly, highway. Road transport, however, is a parasitic form of transport which uses a common highway, built out of contributions from all classes of the community, thereby enjoying a mobility denied to all other forms of transport.

Before a true comparison could be made between rail and road, it would be necessary to know:

(a) The cost of building and maintaining the different classes of public highway, and the wear and tear attributable to different classes of vehicles.

(b) To what extent the private car owner subsidises the commercial vehicle per medium of licences and taxes.

(c) How much restriction the private citizen will tolerate in his use of the public highway.

On present statistical information it is not possible to supply the answers to these questions. However, research by the Commonwealth Department of Transport has produced the following authoritative figures of comparative costs in 1948:

Sea	0.8d. per ton-mile
Rail	2.2d. per ton-mile
Road	13.7d. per ton-mile
Air	41.7d. per ton-mile

and the following statistics of the man-power required to achieve a unit of freight transportation:

BOOK REVIEW

"Steam Up", by Eric Treacy
(London, Ian Allan Ltd.).

Not an elaborate book—the layout is perhaps, even a little disappointing — this recent addition to the range of literature on the railways of Great Britain is well worth the money for the 112 magnificent illustrations. Many are of full page size, and the reproduction is first rate. Canon Treacy is famous for his photography and writings in the field of railways, and his articles on various aspects of railway enthusiasm, which are sprinkled throughout the book, add to the interest. (80 pp., 9½ in. x 7½ in., hard cover, our copy, McGill's Agency, 14/9.)

TRAINS IN FILMS

Commenting on the reference in our February-March issue to the major part played by railways in "Train of Events" and "Ticket to Tomahawk", a correspondent, Mr. Richards, of Hawthorn, Vic., lists several recent films in which trains were featured. These include "Crisis", "Go West", "Train to Alcatraz", "Canadian Pacific", "Louisa", "Annie Get Your Gun", "Misty Street", "Vatican City", "Panic in the Street", "State Penitentiary", "Union Station", "Grounds for Marriage", "Kid Nightingale", "Port of York", "Colorado Ten".

We can't vouch for all of them — magazine editing leaves little time for cinema-going!— but "Union Station" is particularly interesting, and darned good entertainment.

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The public may view with concern the mounting railway deficits; but they are aware that these are caused largely by the railways' assistance to essential industries, and to the accumulated wear and tear resultant from decades of such assistance, accentuated by the hectic moving of men and materials during the war years.

But the public is also deeply concerned with the incursions of commercial road transport into his everyday life — the private motorist sees his smooth-surfaced highway crumbling away under the battering of the heavy road freighters, and wonders how much of his taxation is used to repair the damage—the pedestrian looks askance at the increased density of the bus queues on the city pavement which block his progress, and wonders when bus terminal stations will dispose of the crowds in the same orderly fashion as the railway.

Whichever way the cat jumps, Mr. Citizen knows that transportation will largely be by taxation; taxation per railway deficits, subsidies to private hauliers, provision of public utilities, maintenance of public highways—in one way or another, he will be called upon to foot the bill.

Why, therefore, he asks, is not the whole problem co-ordinated under one comprehending body? And if road transport is considered more efficient in certain avenues, by all means have it instituted with the least possible hindrance to citizen rights. And if Mr. Citizen is going to be the payer, as he undoubtedly will be, then logically his own Government should operate these supplementary road services over his public highways.

Of one incontrovertible fact he is intensely aware. The country must have adequate, efficient, and dependable railway service. The money to supply this need must come either from railway revenue or from his taxable income. In answer to an honest question, he would undoubtedly reply that railway revenue should foot the bill; but, if he is going to be taxed, let it be for public profit and not for private and individual gain.

Holiday by Rail

By C. EINSIEDEL

(Continued)

In this instalment of his marathon tour of the New South Wales Railways, the author takes us to Australia's national capital, followed by a scenic run up "The Mountains" the following day, completing a week of rail travel.

The next day, the "Federal City Express" was the selection. This train at the time was following the "Riverina," which had its starting time advanced from 8.20 to 7.45 a.m., following introduction of air-conditioned cars in September, 1949. A little over two months later, the original order was restored, with departure times of 7.45 ("Federal City") and 8.00 a.m. ("Riverina").

The load of 285 tons was 105 tons less than the limit for No. 3620 on the ruling grade. Over the 50¾ miles to Picton (552 feet), the rise is gradual, with nothing worse than 1 in 70. Coming through this town in the dark on the previous Tuesday, I was uncertain as to when the train had passed through, owing to the tricky approach, so this time I was keen to take stock of the locality. About ¼-mile after passing the station (situated in a narrow valley), the line veers to the right on a 20-chain curve for about 15 chains, and soon after commences a 16 chains radius curve to the left which continues for about ¾-mile, and gives a change in direction of over 180 degrees. All this is on a rising grade of 1 in 75 and, when the train emerges from a short tunnel, it is almost 100 feet above the town—about ¼-mile distant, after travelling 1½ miles. At night, in the Up direction, the lights of the town are seen quite close down below the right side of the train before entering the tunnel, and then, a few minutes later, appear on both sides (but mainly on the left), before reaching the station.

Picton is the point at which, during the war years, the 38 class Pacifics on the Down interstate expresses suffered the indignity of having a 32 in front to assist when their loads exceeded the limit for the ruling grade on the 37 miles to Moss Vale. Just as well for their pride that this happened at night!

In all, there are 20¾ miles at 1 in 75 in the 31 miles from Picton to the Down end of the tunnel just before Bowral; by this time the elevation is 1,698 feet greater. Curvature is practically continuous and, on such a road, it was to the credit of the driver and the engine that the schedule of 71 minutes to Moss Vale was bettered by 8¼ minutes. After watering the engine the departure was 3½ minutes early, which helped the train to draw into the Up platform at Goulburn 8 minutes early, just as the "Riverina" was drawing out from the Down. The schedule allows 76 minutes for the Moss Vale-Goulburn section, on which conditions are more favourable to the engine than on the Up run in the evening, for which 69 minutes are allotted, but I have not been able to work out the reason.

The MCX car (1st/2nd 6-wheel bogie) and the engine came off at Goulburn, the latter being replaced by 3216 (4-6-0) which did the return trip to Canberra.

The rest of the run was to schedule, with Tarago the first stop, then Bungendore (180 miles), after which the crossing of the Great Diving Range at Brook's Bank Tunnel, at an altitude of 2,630 feet, with 1 in 40 grades, is a formidable affair in either direction. The eastern boundary of the Lake George Basin, however, gives trouble only on the Up run when, after passing milepost 176, the track rises 330 feet in 3¼ miles, with 1 in 40 as the maximum grade.

I doubt if there is anything different about Canberra railway station since I last saw it over ten years previously! The rest of the place has gone ahead, though it is hard to imagine it as a city. Unlike most country centres, which just spread over the landscape, the Federal capital has scope for development. I went for a bus ride between trains and, without the aid of a map, the circuitous route which starts and ends at the railway station certainly provides a severe test in orientation. In a short walk I gained the impression that the residents were devoid of interest in "Australia's National Sport," for, on making enquiries from several Staurday afternoon gardeners, I could not get one result, although it was Guineas Day at Caulfield!

On the 4.12 p.m. Up, the load of 236 tons was the same as on the Down. An empty EHO van was added at Goulburn, where a 36 replaced 3216. The pull up to the top of the Divide commenced little more than a mile after leaving Queanbeyan, with two miles at 1 in 40 on sharp curvature. A lift of 728 feet in 10 miles is involved, but the track provides a couple of breathers for the engine.

At 3 hrs. 8 min., this train is timed faster than any other for the run into Sydney from Goulburn. Leaving there 4½ minutes late, the schedule was bettered by nearly a minute, after stops of 85 seconds at both Moss Vale and Strathfield. The 12 minutes from the latter station to Central is also the best for any steam train in that direction and, on this occasion it was exceeded by only five seconds.

Blue Mountains Trip

The next day, a Sunday, found me joining the throng on the 8.40 a.m. to Mount Victoria, on which 3673 had a load of ten vehicles (307 tons). From acktown (20½ miles) to St. Mary's, a distance of miles 70 chains, the time was 9 min. 13 sec., the astest section being the 2¼ miles between Mt. Druitt nd St. Mary's in 2 min. 24 sec. Werrington, usually passed at high speed in both directions, produced a slack for bridgework. After crossing the Nepean bridge, and making pace on the level mile through Emu Plains, speed on the 1 in 60 at the foot of the ountains settled down to a little over 20 mph. After the Glenbrook tunnel it dropped to 18½ mph. Valley Heights (48 miles), where the 1 in 33 grades commence, required a stop of 5 min. for water, and the attachment of No. 5046 (2-8-0) to assist. The first set-down passenger stop was at Lawson (59¾ miles), here the assisting engine took water and, after aiting time at Wentworth Falls, four miles further , the 14 minutes allowed from there to the "away" at Katoomba was found to be a little tight.

I got out here and managed to explore some of the sights before heavy rain set in early in the afternoon. When waiting near the station for a conducted tour, I saw 3673 heading an Up livestock Goods.

The waiting room at Katoomba, with its blazing fire, was well patronised before the departure of the 06 p.m. for Sydney. This train, which balances the 40 a.m. Down, makes additional stops at Hazelbrook, Penrith, and Granville, while the Valley Heights stop

SERVICETON ACCIDENT—See next page

is eliminated. The engine, No. 3315, took water at Penrith, and ran within a minute or two of the schedule throughout. This allowed 2 hr. 11 min. for the 68½ miles, compared with 2 hr. 54 min. for the Down.

This completed a week of travel, with a mileage of 1,960, including 238 miles in Victoria.

(to be continued)

All-metal Louvred Vans

The Commissioner for Railways, Mr. F. C. Garside, announces that a new type of bogie louvred van built of steel has been placed in service in New South Wales.

The Department of Railways has ordered 300 of these vehicles from the Birmingham Railway Carriage and Wagon Company Limited of Great Britain. Upon arrival in Sydney the components are assembled by A. E. Goodwin Ltd. Already five of the vans have been delivered by this local firm, and further deliveries are anticipated at frequent intervals until the 300 are received.

They have been designed to carry produce and goods requiring protection from the weather and from pilfering, and, at the same time, needing ample ventilation. The steel louvres have been so made that they will fit any position in the van and may be readily replaced if damaged.

The new van, which is 45 feet in length, can convey 35 tons of freight. Code letters are LLV.

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Passenger and freight service is provided over a direct route between Perth and Geraldton, the largest town on the north coast; for some miles at either end, trains run over W.A. Government lines and are hauled by W.A.G.R. locos. In addition, there is an extensive road motor service.

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Workshops, etc., are at Midland Junction, in the Perth suburban area, not far from the W.A.G.R. Shops with which there is a considerable interchange of work.

We hope to publish in the near future some illustrations of this little-known but very lively 3 ft. 6 in. gauge system.

VICTORIAN RAIL WORKS CUT

Following the request by the Federal Government that loan works be cut by 25%, the Victorian Government has ordered a similar reduction in expenditure by the Victorian Railways. The Chairman of Commissioners, Mr. R. G. Wishart, announced that planned works were expected to cost £13,250,000, and that means of reducing this amount were being discussed with Treasury officials.

It is expected that such works as the duplication of the Camberwell-Ashburton line, and the reconstruction of Richmond Station will be deferred for some time.

SPECTACULAR COLLISION
"Overland" Expresses Meet at Serviceton.

At 2.58 a.m. on 7th September last, the 7.00 p.m. ...n "Overland" Express (No. 69), load 12/565 tons, ...gines 977 and 958, Drivers Hannan and Milne, ...ard Danaher, load 330 passengers, is alleged to have ...ssed the Down Home signal at danger, and collided with the 1.35 Up "Overland" (No. 10), which was standing at the platform at Serviceton, preparatory to being shunted into No. 2 Road. The engines of the ... train were Nos. 953 and 946, all four being A2 ...s 4-6-0's.

On the Down (i.e., the moving) train, the bulk mail ...ar telescoped with the leading sleeping car "Coliban", both vehicles being derailed. On the Up train, the ...ulk car and the leading sleeping car, "Baderloo", were ...lescoped, and the leading end of the sleeping car ...e in.

During the period when the drivers of the Down ...n and fireman Haby, of No. 958, were being removed to Bordertown Hospital, it was noticed that Fireman Hosking was missing. His body was found under No. 977, which had overturned on its right side.

All four locomotives have been condemned for scrapping.

The S.A.R. 107-ton crane from Tailem Bend was called, and arrived at Serviceton at 2.00 p.m. The ...on crane from North Melbourne left at 7.00 a.m. ... the accident.

Passengers were transferred to opposite trains and the trains reversed. To haul the Victorian train, two light engines departed from Dimboola at 5.48 a.m.

The District Officers from Geelong departed by taxi for the scene. Other arrangements included the cancelling of the 9.00 a.m. Up Serviceton train, which started instead from Dimboola, passengers being conveyed by road vehicles over the intervening distance.

Footnote

An interesting result of this most unfortunate accident was that two R class engines were allotted to the "Overland" that night, with instructions to make up as much lost time as possible. So well was this carried out, including subsequent stops, that the express resumed normal running very soon afterwards.

Safety Record Unmarred

Despite the spectacular nature of the accident, no passengers were injured seriously, and the long record of freedom from fatalities to railway passengers in Victoria remains unblemished.

DIESEL SWITCHERS FOR POWER STATIONS

The Sydney County Council has ordered two diesel-electric switchers for its new power station at Pyrmont, N.S.W. No details are available, but the cost will be £9.

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Contributions Invited

Prototype and Freelance Modelling

By K. N. Lowry

(Pressure of work leaves "Bill" little time for literary effort. To give him a breather, we reprint from "Model Railway Newsletter" some observations made to the editor of that journal.)

The modeller who models prototypes chooses a full-size railway, such as the LMS or the NSWR, and patterns his locos and rolling stock on this system, with varying degrees of fidelity and fine workmanship, depending on his outlook and ability. Usually, however, the similarity to prototype ends there, as scenery, structures, and trackwork rarely bear much resemblance to the full-size system due, mainly, to space limitations.

Now, a real railroad does not make locos and rolling stock, and so forth, merely because another railroad has those particular types. Each system designs its equipment to handle the business catered for in its territory, and under the working conditions prevailing. That is the theme of the Freelancer, who creates a railroad empire—a territory of potential resources and natural hazards—and designs and selects equipment suitable for those conditions. This leaves the Freelancer with the whole railway world from which to choose his basic designs; the only proviso is that his models conform to the appearance and dimensions of standard railway practice. This means that a coach body of one railroad could be chosen and fitted with bogies designed for another car or railroad, the qualification here being that it would not be reasonable to fit bogies of a light type on an obviously large or heavy coach, and that a freight bogie would not look appropriate on a coach.

Many modellers seem to be Free-lance both from preference, and because one does not refuse gifts from well-meaning friends and associates merely on the grounds that they are not suitable to a particular prototype. I, too, am freelance, and by this I mean that I like to include on models all possible detail and make them symmetrical and realistic in operation. It means also that I follow general railway practice rather than set prototypes, and see no lack of virtue in a freelance model, provided it has a definite resemblance to a full-size vehicle or structure. If a loco, for instance, is claimed to be a model of an A2 or a C38, the resemblance must be accurate; if, however, it is the Muckheap Western's 4-6-0, based on a standard design adapted to their conditions, I regard it as a loco to be judged on its proportions of boiler, cab, and the correct location of piping and fittings.

MAYFIELD LINES

By L. A. Clark

2. TIMETABLE WORKING
(Concluded)

Assuming the graph to be complete, the next step will be the preparation of the working timetables for use of the officers in charge of the various stations. These are in roll form similar to a tramway destination board with the opening large enough to display details of four trains, thus enabling the operator to look ahead for some time without turning the roll. The W.T.T.'s are ruled into four columns. The first gives the departure times of all trains to be handled; the second, the train identifying number; the third, its destination; the last, the type of train, and in addition, at stations where marshalling is to take place, particulars of the train's composition are also indicated. The fastest train takes fifteen minutes to run between Mayfield and Athol, allowing for two stops for winding purposes.

A Sunday timetable starting at 7 a.m. and finishing at 9.25 p.m. (2 hrs. 15 mins. real time), providing for 113 trains and requiring 13 men, is in use at present. It comprises a half-hourly electric service to Brookvale all day, using one 4-car train. Up till midday, alternate electrics connect at Brookvale with a local steam train for Griffith (see graph) which, in turn, meets a rail motor for Athol, thus giving an hourly all stations service between Mayfield and Athol. Between midday and 6 p.m., the local Brookvale-Griffith trips are withdrawn and an hourly service from Mayfield to Griffith worked by 32 class engines and a four-car set, is substituted, the rail motor connection at Griffith being maintained. An irregular schedule of through trains is provided between Mayfield and Athol throughout the timetable and some goods trains are run on all sections of the line, with the Wallsend branch receiving a regular hourly service.

During the operation of the table, double-heading is not practised to any extent. Although two engines of approximately similar types will pull twice as much as one, or will pull a single engine load at greater speed, this type of working is not allowed for, owing to the delays incurred in winding two engines, and to the fact that stations and run round loops are not long enough to accommodate double length trains. Therefore the practice is restricted to assisting certain trains up the long 1:100 grade between Griffith and Stanbridge.

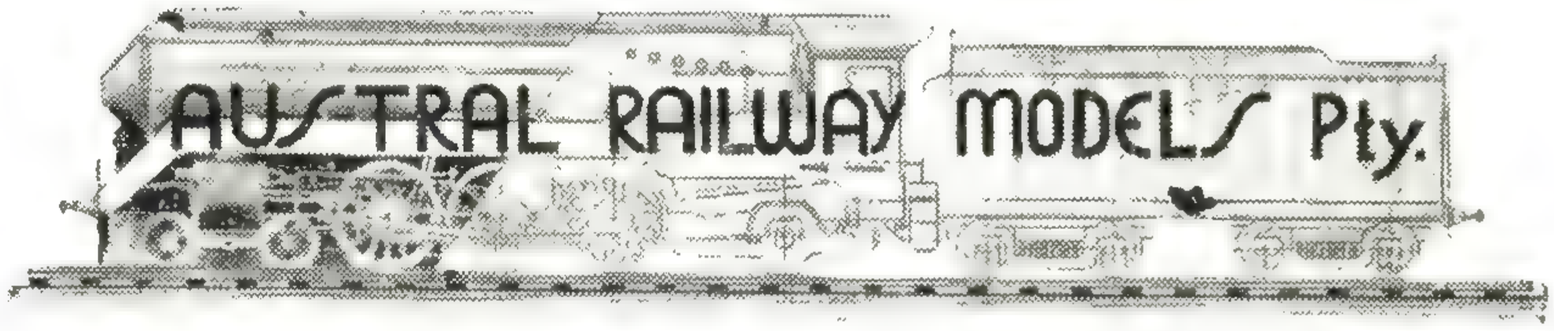
A four-car electric set consists of a steel motor car with mechanism, a wooden trailer, a steel trailer and a steel dummy motor. Both the motor cars are fitted with imitation pantographs. On the down journey the train runs with the working motor leading, and on the up, the set is propelled, the dummy motor leading, an arrangement which works quite well as the cars are close-coupled.

On operating days there are scenes of great activity as engines, cars and wagons are brought out and set in their appointed places according to the allocation sheet which was drawn up before work began on the graph. The staff is then directed to the various stations, the working timetables distributed, the clock which has a ten-inch dial is stood in a position where it is visible from all parts of the layout, and everything is ready for a start.

The object of a timetable, of course, is to see that as many trains as possible arrive and depart on time, and to the extent that the staff studies their instructions and makes a genuine effort to carry them out, depends the measure of success achieved. If operators concentrate on the job and do not engage in irrelevant conversation during lulls in the proceedings, a higher percentage of "on times" will be secured. Working by the special clock demands alertness and the tendency to take the mind off the matter in hand when it is seen that perhaps ten minutes will elapse before the next train is due, must be guarded against, because the real time interval is less than two minutes.

The Sunday table is fairly easy, opening up in a leisurely style and continuing at that tempo throughout. To assist station masters en route to identify trains with certainty, each train carries its number on a small card. A spot of realism, reminiscent of the Sydney main suburban line is obtained by starting two trains out of Mayfield at the same time. This occurs several times in the course of the table, one running on the mainline and the other on the suburban. They run neck and neck until the slow has to stop at Norwood to allow the fast to have the road.

Sometimes inexperienced operators send out the wrong engines or cars on trains, upsetting the works completely. Control then has a headache for a while as he thinks out ways and means of restoring the position. On a recent operating day, the S.M. at Griffith complained that he was not receiving the right trains at the proper times. His colleagues at Stanbridge and Athol were emphatic



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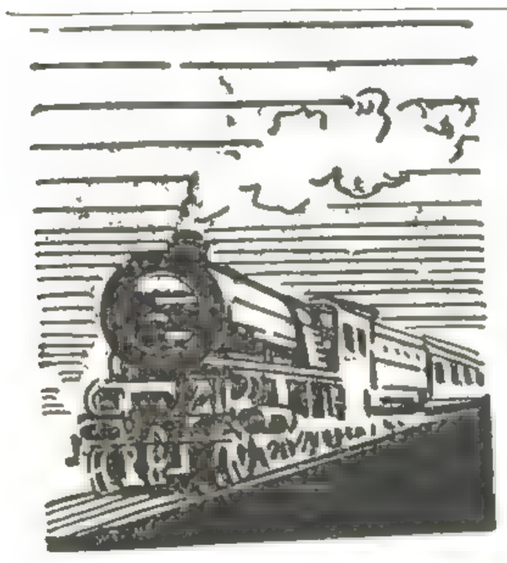

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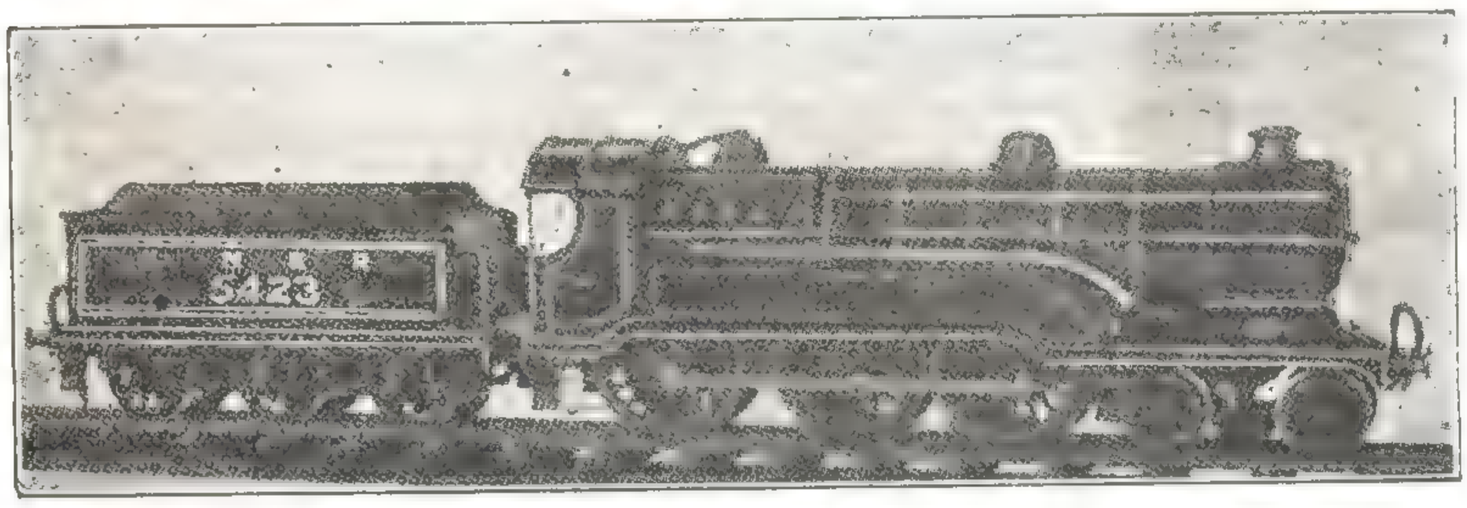

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THE MODEL DOCKYARD

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that they were observing the table to the letter. Hard things were said and the atmosphere was becoming very heated when it was discovered that Griffith was attempting to run the Sunday service from a week-day timeta[ble] which was on the same roll. He immediately became the target for ribald and sarcastic comments, and it is likely to be a long time before he lives down the disgrace. However, such incidents serve to enliven the proceedings, and add a touch of humour to what mi[ght] otherwise be quite a serious bu[si]ness.

An effort is made to have the same operators at the same stations on each occasion, but this is not always possible in view of th[e] large staff required, but it is hop[ed] shortly to be able to arrange [for] the recruitment of a regular te[am] of key men to take charge of the important places. It is the constant aim to secure the greatest possible number of trains on time, and to achieve this, much depends on the experience and skill of the operators, inexperienced staff b[ei]ng able easily to reduce a w[ell] prepared timetable to a state of chaos. The best result so f[ar] recorded is 77 per cent. of tra[ins] on time, working the Sunday timetable which requires a staff of at least 13, although better results are obtained with 15. The whole of the operations are under the direction of "Control," who has possession of the graph. This duty has been performed mostly by Cyril C. Singleton, General President of the Australasian Railway and Locomotive Historical Society, and himself a senior officer of the N.S.W.R.

Since this series of articles w[as] written, certain alterations ha[ve] been made to the layout which have changed its appearance in the parts affected, and the plan which appeared on page 20 of the Oct.-Nov., 1950, issue is now ob[so]lete in several respects. The qua[d]ruplication has been extended to Brookvale (97 feet), a work which involved the removal of lever frame, points and diamond crossing from Norwood, and the p[ro]vision of an additional platfo[rm] and laying of a double junction Brookvale. Owing to lack of sp[ace] at this station, it was found necessary to depart from the track policy enunciated in the second instalment in this series, and make use of a single slip, in order to provide the same facilities for terminating up trains, as existed previously. Improvements Athol, designed to give better ac-

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cess to "loco" from the middle platform road have been made, and both platforms lengthened.

As main line trains do not stop at Cammeray or Norwood, the relative island platforms have been removed and the up main line re-aligned at both places.

A two-car diesel train is under construction.

THE END.

SUBSCRIPTIONS

Several readers have been concerned over the effect of "double-barrel" issues on the duration of their subscriptions. The answer is that, whenever an issue has to be dated for two months, current subscriptions are extended, so that you still get twelve issues for your 15/-.

LETTERS to the EDITOR

DIESEL v. STEAM ACROSS AUSTRALIA
N.Z. Visitor's View

The Editor,
Railways in Australia.

Dear Sir,

I was interested in the correspondence about diesel and steam, more particularly as I travelled from Melbourne to Perth by rail in order to see a little more of Australia and Australian railways. Quite a lot has been made in the papers of the reduction in running time of a day between Port Pirie and Kalgoorlie which will follow the arrival of diesel-electric locomotives. This will suggest to many that it is diesel-electric power which will bring about this acceleration, whereas in fact it will simply be a reversion to the pre-war schedule maintained by steam. Even without omission of some of the present stops the present schedule is very easy — we gained 40 minutes during the last four hours' run, without exceeding a maximum of about 66 m.p.h. (In the South Australian section we ran the last 34 miles into Port Pirie in 31 minutes with a maximum of 73 m.p.h.)

The run from Kalgoorlie to Perth showed up the limitations of the 3 ft. 6 in. gauge; even so, I felt the 16 hours for 380 miles compared unfavourably with the Wellington-Auckland run in New Zealand, which is a longer distance in a shorter time on a much more difficult line.

Incidentally, on the famous long straight, speed never exceeded more than 35-38 m.p.h. between stops.

Your correspondent, Mr. Jim Rowe (R. in A.—1/51) is surely wrong in claiming so many advantages for "diesels". All these advantages are simply the advantages of the electric locomotive, and the diesel engine is but a generator which allows the electric locomotive to operate independently of the normal conductors, but which has certain disadvantages, notably high initial cost and great weight.

I noticed Western Australia uses the same central type of coupler prevalent in New Zealand. It has the great disadvantage of allowing surges in the train, very noticeable when stopping and starting. On new passenger rolling stock in New Zealand, automatic couplers of the knuckle (buckeye) type are now being introduced, with a very marked improvement.

Yours, etc.,
R. G. R. CALVERT.
Chief Civil Engineer's Office,
N.Z. Railways,
Wellington, N.Z.

(Principal reason for slow steam schedule on the "Trans" line is poor track. Apparently it is hoped to avoid or delay costly relaying by using diesels. Other potent reasons are lack of water and the necessity for chemical treatment of what there is, and the high present cost of hauling loco coal.—Ed.)

BIGGER DIESELS AND BETTER STEAM LOCOS.

The Editor,
Railways in Australia,
Dear Sir,

May I join the Diesel v. Steam controversy? In the first place, I think the 1750 h.p. diesel is too low for the Mt. Lofty run — 2000 h.p. would be much better, as the Americans have standardised on their flyers — one, two, or three, as needed. Two of these work such flyers as the Hiawatha, the Burlington Zephyrs, the 20th Century, and the Broadway. Australia has no engine capable of working such trains to time. If the diesel is inferior to steam, why were such engines as the Milwaukee 4-6-4's, the T's, K's, and the Niagaras ousted from these workings? There isn't a really modern steamer in Australia — except the N.S.W.R. 38 class (possibly)— and by modern, I mean (a) High pressure, (b) Long valve travel, (c) Modern front arrangements generally. Why not try out some modern French compounds, such as a Chapelon 4-6-2, 4-8-0, and the new 4-8-4 3-cylinder compound? North and south of Sydney, 4-8-4's should be used on interstate expresses — something like the SAR 520's, but exerting 4500 lbs. at least. And, for mercy sake, scrap the antiquated, obsolete P class, and get something like the new standard class 4 or 5, British Railways, in their place; the same thing with the DD's in Victoria, and Rx's in South Australia. I should like to mention that the C.P.R. is using a diesel of no less than 2250 h.p., and

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this seems to be the new standard in America. As for blockade in war, there are only two navies in the world to-day —the U.S.N. and the R.N. It would take Germany and Japan at least ten years to begin to build fleets similar to what they had in 1939, so who's going to cut off the oil?

Yours, etc.,
EDW. H. JOSHIN.

Poonindie, S.A.

(The S.A.R. and most other Australian railway undertakings, keep themselves informed as to what goes on in other parts of the world, so presumably have reasons for their decisions. It must be remembered that our loading gauges are not so large as those obtaining in the U.S., nor are our trains so heavy. In addition, the decision to electrify the Western and Northern lines out of Sydney eliminates the worst part of their locomotive problems. To scrap the locos you mention in one fell swoop, or even in a short time, is an economic impossibility, and even were it possible, the P's—actually the 32 class—are far from being outmoded or inefficient; DD's are in process of scrapping, and the new R class should meet with your approval. As regards naval problems, we seem to have heard of at least one other potential cutter-off of oil!—Ed.)

FAN MAIL

A. G. HICKS, Fullarton, S.A.—Certainly —we're quite soft-hearted! Thanks for news items.

E. R. GEEVES, Coburg, Vic.—Thanks for good wishes.

N. K. CHENNELL, Medindie, S.A.—Hope you will always feel that way!

QUESTION BOX

Questions on railway matters may be sent to "Question Box," c/- Traction Publications, 29 Seymour Grove, Brighton Beach, S.5, Victoria.

It is regretted that direct correspondence cannot be entertained.

Mr. A. W. MOLONY, of Ganmain, N.S.W., asks:

1. (a) How is the Commonwealth Department of Transport constituted and organised, and what is its primary function? (b) What are the various Divisions and/or Branches of this Department? (c) How is the Railway Standardisation Division organised; what are the various sections and who are the leading officers in the Division?

ANSWER: (a) The Commonwealth Department of Fuel, Shipping and Transport, with headquarters in Melbourne, is a Department administered by a Minister of the Commonwealth Government (at present, Senator the Hon. G. McLeay), and dealing with such matters as production and distribution of oil and coal; shipbuilding, shipping, marine and lighthouse services; and Commonwealth interests in rail and road transport services.

(b) Australian Shipping Board; Commonwealth Handling Equipment Pool; Joint Coal Board; Commonwealth Coal Commissioner; Oil Advisory Committee; Marine Branch; Lighthouse and Navigation Services; Rail Standardisation Division; Road Transport Division; Commonwealth Railways.

(c) The Railway Standardisation Division is a division under the Director-General of Land Transport, Sir Harold Clapp, and much of its work has been concerned with Sir Harold Clapp's 1945 Standardisation Report, and arrangements with the various States concerning its eventual implementation. The Division's Director of Civil Engineering is Dr. W. D. Chapman, and Mr. Muller and Mr. Buchanan are Assistant Directors.

2. (a) What is the Australian Transport Advisory Council? (b) How is this body constituted and organised and who are its principal officers?

ANSWER: The Australian Transport Advisory Council was first formed in November, 1944, with only Commonwealth personnel, to provide a body for the discussion of transport problems on a national level. In April, 1946, it was re-organised to consist of the Commonwealth Ministers for Transport, Civil Aviation, Supply and Shipping, Post-War Reconstruction, and Interior, together with the State Ministers for Transport. The Council is assisted by technical officers of the Commonwealth Department of Transport, is a clearing house for views and information and for formulating a national transport policy, and is a medium for achieving such co-ordination as is necessary and possible under present circumstances in Australian transport. It is an advisory body only, and for any decisions to be made effective, they have to be ratified and put into effect by the Commonwealth and respective State Governments.

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MELBOURNE: V.R. Institute, 3rd Friday of each month at 8 p.m. Secretary: J. Beckett, 22 Kirkwood Avenue, Sandringham, S.8, Vic.

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SYDNEY: Railway Institute (Devonshire Street), 2nd Tuesday of each month. Secretary: H. McDonald, 3a Oxford Street, Burwood, N.S.W.

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THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 22 Whish Street, Windsor, N.3., Qld.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

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THE VICTORIAN MODEL RAILWAY SOCIETY meets 3rd Wednesday of each month at 8 p.m. at the Model Dockyard, Swanston Street, Melb Visitors welcome. Secretary: J. H. Hooker, 6 Huntinghower Rd., Malvern, S.E.3.

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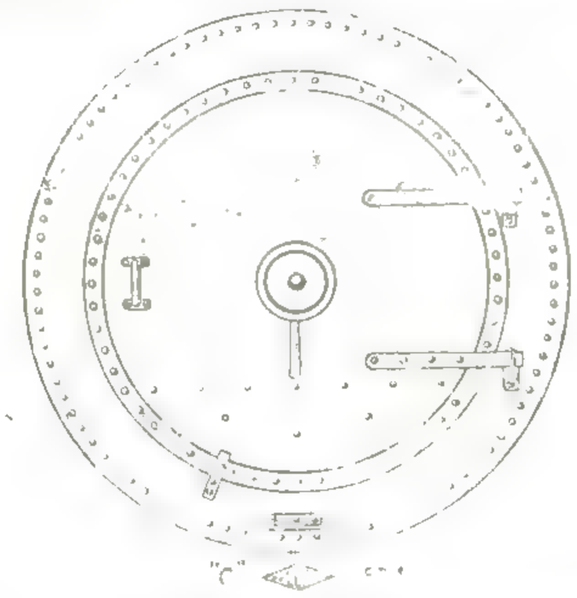

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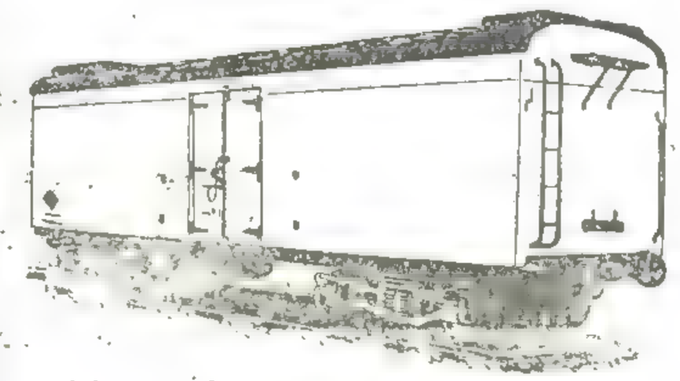

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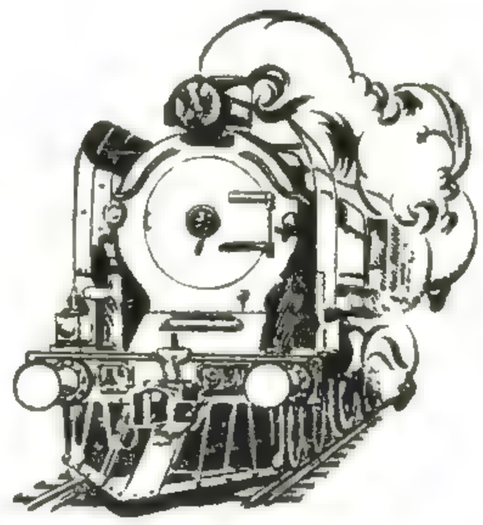

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RAILWAYS IN AUSTRALIA

MONTHLY 1/3

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Diesel or Steam for Australia?

Recent newspaper articles and statements by visitors from overseas encourage the view that the day of the steam locomotive in Australia is past. Some go so far as to say that diesel-electric locomotives will make unnecessary the electrification schemes planned for several routes.

While the general public may remain apathetic, or, at best, be impressed by the colourful streamlining of the new diesels, railwaymen and railway enthusiasts alike are keenly interested in the problem. The correspondence columns of this journal indicate the extent of this interest. The fact that Australian railways are currently unable to handle traffic offering tends importance to any suggestion for improving operating conditions, not least of which is the provisions of adequate locomotive power.

Diesel advocates stress the saving in manpower by the use of multiple control of diesel electric locomotives. This, with their higher permissible speed over inferior track, enables more work to be done by fewer crews.

The higher "availability" of diesels, enabling each engine to stay on the road for much longer periods than is permissible with steam locos. means that fewer engines are needed to do the same job, or that the same number of engines can do more work. This availability is obtained by the long periods diesels can run without fuelling or maintenance, and the absence of such problems as the necessity to clean fires.

Water is one of Australia's biggest railroading problems, and here the diesels score again. On certain lines through desert country, nearly half the freight traffic hauled is water or other locomotive requirements—on one Queensland route this traffic is reported to comprise 70% of the total.

The current coal shortage, although probably only temporary, is nonetheless very real, and has necessitated the conversion of many steam locos to oil burning. Here the diesel scores again, for the same work can be done on 1 to 2 gallons of fuel as is done by oil-burning steam engines on ten gallons.

The absence of pounding—a major defect of steam locomotives—enables diesels to run at a higher speed on a given track. This enables costly track relaying to be deferred, and by speeding turn-around enables existing rolling stock to carry more—a most important saving at any time, but especially now.

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OUR COVER PICTURE

Our cover picture this month shows a heavy ore train on the way to Burnie, Tasmania. A powerful 4-8-2+2-8-4 Beyer Garratt of the Emu Bay Railway Co. is doing the hard work. (Official E.B.R. photograph).

For the Steam Locomotive

Against all the advantages set out above, ..can be set the vital fact that, in Australia, diesels depend exclusively on fuel, every drop of which must be imported by sea over considerable distances, and much of it under unfavourable economic conditions. Diesel advocates point to the tremendous expansion of refinery and storage facilities in Australia, but even this does not remove the basic fact. It is noteworthy that Great Britain, with similar problems to face, and despite the enthusiastic use of the diesel omnibus for local transport, continues to pin her faith almost exclusively on steam locomotives.

It is also true that steam locomotives are far simpler and cheaper to construct and maintain, and do not require the use of so much highly-skilled labour. It is worth remembering, too, when comparisons of performance are made, that the steam locomotive rarely receives the care, thought and attention lavished on the diesel. An American railroad which decided to treat steam locomotives as others treat diesels found the results so gratifying as to decide against any use of the latter.

One reason which has led to a wider use of diesels in America is that it is uneconomic to maintain two separate maintenance establishments for steam and diesel locos respectively. Where diesels were introduced for a specific job, it was often desirable to dieselise completely for that reason.

From the large number of diesel-electric and diesel-mechanical locomotives in service and on order, it is certain that big changes are about to occur in Australian railroading.

While we, as enthusiasts, may deplore the intrusion of the cold impersonality of the diesel engine, we must recognise that the important thing is to improve railway services in every way possible to combat inroads of other forms of transport.

If the diesels can best achieve this, then diesels must have.

(Comparisons between electric and diesel-electric operation will appear in a future issue.)

THAT PLACE KALKALLO!

The cover illustration for our April-May issue is proving a source of headaches of no mean order. Apparently the "Age" photographer who took the photograph had lost his bearings in the snow about which he was so excited, for we now have definite information that the location was not anywhere near Kalkallo, but was the level crossing on the Hume Highway with the Heathcote Junction-Bendigo line, near Kilmore.

PUBLICATION DATE

Although dated AUGUST, 1951, to preserve continuity, this issue was actually published in November.

Commonwealth Railways diesel-electric locomotive No. GM3 passing Auburn signal box after a trial trip over New South Wales Railways' metals to Penrith. Two days later, on 29/11/51, GM3 was due to haul a freight to Albury on the first stage of her long journey to Port Augusta, S.A., for delivery to her owner. GM2 went through the same process on 7/11/51 and 9/11/51. On the 5 ft. 3 in. gauge Victorian and South Australian Railways, the diesels are hauled, mounted on special transporter bogies, in freight trains. (Photo by Noel Reed.)

A VISIT TO CLYDE

Australia's Biggest Privately-owned Railway Works

Not so many years ago, the future outlook for the Clyde Engineering Co. seemed more than a little bleak. Work there was, it was true, but somehow, there seemed something lacking. To-day, a visit to the big plant at Clyde (an industrial suburb on the Main Suburban Line, 13 miles from Sydney's Central Station) reveals no lack of energy, and a very real belief in the future.

The explanation? Diesels!

Thanks to an agreement with the General Motors Corporation, U.S.A., Clyde has become Australia's first manufacturer of mainline diesel-electric locomotives. The works have been expanded and re-equipped to place the production of these impersonal, but highly efficient, monsters on an assembly-line basis. Current trends in Australian railroading, and the growth of Australia's population and industry ensure a continuing market. At the present time, Clyde is engaged on an order for eleven 1,500 h.p. locomotives for the Commonwealth Railways. Because of the urgent need for these locomotives in service, main components, such as power plant, electrical transmission, and control equipment, together with cast steel bogie side frames, bolsters, and axle boxes, have been imported from the U.S.A. Clyde builds the structure housing all this, supplies and assembles auxiliary items, and tests the completed locomotive. A further order of 26 1,500 h.p. locomotives for the Victorian Railways will be entirely Australian, except for the diesel engines and generators. These, and any locomotives built subsequently, will have fabricated steel bogie frames, etc., as it is not at present an economic possibility to produce in this country the large steel castings used in the American product.

Steam Locomotives, Too

In addition to the diesels, Clyde has on hand two orders for steam locomotives. These are 2-8-2's—ten for the Commonwealth Railways (4 ft. 8½ in. gauge) and ten for the South Australian Railways (5 ft. 3 in.). In addition, tenders are built to replace worn-out boilers on existing locomotives. Locomotive boilers, and other pressure vessels, form a basis for continuous production, as well as forgings of all kinds for railway and other purposes. Another established line is the construction of bogie tank cars for the various rail gauges used in Australia, while a useful "sideline" is the building of double-decker bus bodies, a large order for which is now being completed. The buses are built in a section of the plant used for aircraft work during the war.

Labour Shortage

All this takes place in an area of 27 acres, ten of which are occupied by buildings. The stockyard occupies another two acres. There are two miles of railway, half of which was laid this year. With a normal supply of labour, 2,000 men could be employed at the plant; at present, only little more than half that number are on the payroll.

Diesel Shops.

After a pleasant welcome at the administrative offices, the visitor is shown the pride of the works—the new Diesel Electric Locomotive Assembly Shop. Still in course of construction, it will be finished early next year. Finished or not, the 410 ft. building (it is 90 ft. wide, and has an auxiliary bay which adds an additional 20 ft.) was already bustling with activity when we saw it. The second locomotive of the Commonwealth Railways order was approaching completion, the third was well under way, and the fourth started; the fifth was beginning to take shape in the boiler shop.

Boiler Shop

The latter was a hive of activity of the most diverse kinds. Steam locomotives, diesel locomotive parts, boilers, tenders, tank cars lay on all sides, in various stages of manufacture. At full pressure, this shop is capable of producing three steam loco. boilers, six to eight 11,000 gallon tank cars, and four diesel electric locomotives monthly. Overhead cranes up to 50 tons capacity handle components with ease, as does an automatic welding equipment, with a capacity of 100 lineal feet per hour. Probably the most spectacular machine is the 600-tons capacity Hydraulic Press. This monster will form plates up to one inch in thickness.

Other Shops

Other impressive items of machinery in the Machine and Forge shops include a Wall Planer with an 18 ft. stroke and 14 ft. vertical travel, and a 3-ton steam hammer.

Long Tradition

The Clyde Engineering Co. is the direct descendant of a timber business started in 1855 by Mr. W. H. Hudson. In 1876, the firm which grew out of this business commenced the manufacture of railway rolling stock, and tramcars, in addition to major contracts of various kinds in other spheres. The Clyde Engineering Co. Ltd., was incorporated in 1898. Its first locomotive was produced in 1907—a T class (now 50 class) 2-8-0 for the New South Wales Railways.

With nearly a century behind it, Clyde has every reason to look forward to an equally long period ahead in the field of railway equipment.

ACKNOWLEDGEMENT

Through an oversight, acknowledgement was omitted of the pictures of the Serviceton accident in our last issue. They were reproduced by courtesy of the "Age" (Melbourne) for whose help on this and previous occasions we are most grateful.

Of the 70 R class 4-6-4 locomotives on order from the North British Locomotive Co. Ltd., for the Victorian Railways, several have already been delivered and are in service, with marked effect on train running, particularly on the "Overland" expresses to Adelaide. The reported discovery of certain defects in construction has led to rumours that the R's are a disappointment in service. We understand that this is definitely not so, engines of this class having returned to the shops purely for replacement of defective parts, and not through any fault in the design.

The following detailed notes have been adapted from the "Locomotive" magazine. (An illustration of one of the locomotives in service which was to have accompanied this article will appear in a future issue, certain difficulties having arisen.)

These new locomotives are being built for 5 ft. 3 in. gauge but are convertible to 4 ft. 8½ in. gauge. The design provides that when conversion to standard gauge is made the main frames will remain unchanged; distance pipes have been provided at the cylinder seatings to the frames, between the central connections of the cylinders, sidebar bracket and the trunion and reversing shaft brackets.

The locomotives are to the design and requirements of Mr. A. C. Ahlston, Chief Mechanical Engineer. Inspection is by Messrs. A. E. Turner and John Coates & Co. Ltd., London. The engines and tenders are being transported by road to Glasgow Docks and shipped fully erected to Melbourne, where they are unloaded by a specially-constructed gantry crane.

The boiler barrel consists of three rings of which the middle one is tapered. The longitudinal seams are treble riveted, with inside and outside butt strips, circumferential seams are double riveted. There are 30 superheater flues of 5¼ in. O.D., and 155 tubes of 2 in. O.D. The smokebox tubeplate, which is stayed above the tubes by braces to the first ring, is attached to the boiler by means of a solid rolled angle ring. The outer firebox back plate is supported by longitudinal stays fixed to the third ring.

The Belpaire firebox has an all-welded inner steel box with a long combustion chamber and two thermic syphons which carry the brick arch. Roof stays are of "Longstrand" steel; flexible stays are fitted in the breaking zones and round the combustion chamber.

The boiler is supported at the front of the firebox by expansion shoes attached to the foundation ring and bearing on slides fixed to the front end of the frame cradle casting. Deflection plates are located at the front of each of the coupled wheels to reduce bending stresses in the frames. A breathing plate is fitted between the foundation ring and the hind end of the cradle casting.

The smokebox contains a self-cleaning spark arrester.

The regulator valve is of the balanced type and is fitted with a pilot valve. Two tangential steam driers are provided in the dome and steam is supplied through a 7 in. dia. internal steam pipe to the 30 element "Melesco" superheater.

A Standard type MB-1 stoker unit is fitted and delivers coal under the firebox to the firing table located in the centre rear of the box. A hand-

NARROW-GAUGE COMFORT

Interior view of a 2nd-class passenger car, New Zealand Government Railways (3 ft. 6in. gauge).

(Courtesy "Outdoor Advertising")

operated "Waugh" type fire grate is provided and arranged for rocking and dumping in two sections with fixed sections on each side of the stoker firing table. The all-welded ashpan is in two sections, fitted with double hopper doors and has drenching equipment. Sliding doors are fitted to each hopper and are operated by means of an air cylinder. An air-operated Franklin firedoor is fitted.

Asbestos mattresses are applied to the boiler barrel and throat plate. The firebox is lagged by asbestos sprayed on the inner surface of the clothing.

General steam fittings include two Nathan type 1918 non-lifting injectors, two Coale safety valves, one muffled and one plain, two blow-off cocks, of the Railway's standard pattern, with separators fitted at the front of the firebox sides, two sets of water gauges with Klinger type glasses, and two pressure gauges.

The bar frames are cut from rolled slab and finished to a thickness of 5 in. A cast steel headstock incorporating buffer beam and dragbox is fitted at the front end and the back end of the frame consists of a one-piece cast steel cradle securely attached to the main frames at the rear of the coupled wheels. Ample staying is provided by cast steel cross stretchers. The horn shoes and wedges are of phosphor bronze and the horn clips are of cast steel. Skefko self-aligning roller bearing axleboxes are fitted to all coupled axles.

The coupled laminated bearing springs are overhung, compensation is arranged between the driving and trailing coupled wheels. An "Alliance" automatic coupler and a transition screw coupling are provided at each end, Spencer Moulton draft gear is fitted at the rear of the tender.

The cast steel wheel centres are of "SCOA-P" type; the revolving masses only being balanced by lead in pockets. The tyres are of Victorian Railway standard profile and secured by retaining rings. Crank pins and coupling rod pins are forged from 3% nickel steel.

Cast steel cylinders incorporate the smokebox saddle base; they have renewable cast iron liners in the steam chest and barrels. By-pass valves are applied to the bottom of each cylinder.

Walschaerts gear actuates 11 in. diameter piston valves with a maximum travel of 6½ in. and cut-off at 75% in full forward gear. Reversing is by hand screw gear on the left hand side. Connecting and coupling rods are forged from manganese molybdenum steel. Adjustable brasses are fitted to the connecting rods and coupling rod bushes are of the solid type, lined with white metal. The piston has a 3½% nickel steel forged centre with a cast iron bull ring riveted to it; two cast iron piston rings are fitted. Piston rod and valve spindle packing are of the "King" type.

Lubrication of valves and pistons is by means of a Nathan six-feed type DV2 mechanical lubricator; all feeds are controlled by terminal checks and atomisers are provided for the feeds to the steam pipes and top of cylinders. A manifold is fitted for atomising steam. Lubrication of the engine bogie centre, trailing truck pivot and coupled wheel axlebox horn faces is also by means of a Nathan six-feed lubricator. Distributors are provided for lubrication to the axlebox horn faces for each pair of coupled wheels. Lubrication of the air-compressor and stoker engine is by means of a two-feed Detroit lubricator.

The leading bogie frame consists of steel bars with cast steel transom and cast steel end bars cast integral with the outer horn cheeks. The inner cast steel horns are joined together transversely by means of steel frame stays. The horns are fitted with hardened steel liners and tied by forged horn stays Spring beams carrying the laminated bearing springs rest on top of the Skefko roller bearing axleboxes and the bogie load is transmitted to the springs through spring seats attached to the underside of the side frame bars. The centering device consists of heart-shaped rockers having an initial and constant resistance of 33-1/3%. The bogie is attached to the main frame through a central pillar and the bogie centre is fitted with mild steel and gunmetal liners. The trailing bogie is of the Delta type, with all-wedled frame. Hardened steel liners are fitted to the horn openings, to which cast steel horn stays are applied. Laminated bearing springs are fitted, the spring gear is of the self-contained type and compensated between the bogie wheel springs. A cast steel pivot is attached to the top of the leading end of the frame and a phosphor bronze lubricated liner is provided between the pivot seat and the pivot casting on the engine frame. Skefko roller bearing axleboxes are applied to the axles. The centering device consists of heart-shaped rockers having a constant resistance of 20%.

Staff exchange apparatus is fitted on the cab side and a Flaman type E3 speed recorder is provided.

Westinghouse A-6-ET brake equipment is provided and includes a 10 in. x 10⅝ in. type KL single stage air compressor, a number 8D governor and an 8 in. air strainer. Two 13 in. diam. cylinders actuate brake blocks on the coupled wheels. The hind bogie is fitted with two 8 in. short stroke brake cylinders, one on each side frame for operating brake blocks at the back of the wheels. The tender is fitted with Westinghouse automatic hydrostatically controlled variable load brake equipment; two 10 in. diam. cylinders operate clasp brakes on all tender wheels.

Cast iron sandboxes, mounted on top of the boiler, deliver sand to the front of the leading coupled wheels; each sandbox is fitted with an air-operated sand trap.

Pyle National electric lighting equipment is provided and includes headlight with focusing device, two electric marker lamps on the smokebox front, two electric marker lamps and one back-up lamp on the back of the tender tank.

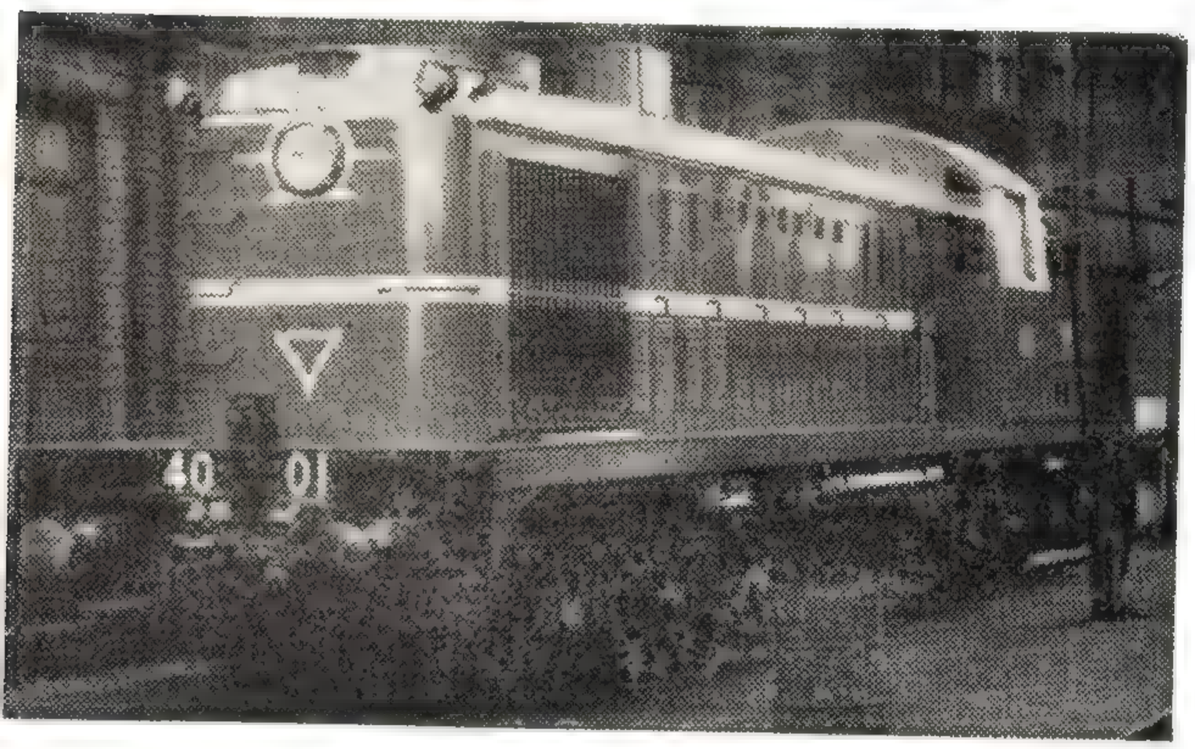
The tender has capacities of 9,000 gallons of water and six tons of coal. The tank and bunker is of welded construction but angles for stays and washplates are riveted. The underframe is constructed from mild steel plates and sections.

The tender bogie frames and transoms are of mild steel plate, flanged and welded into box section and the end bars are of mild steel plate, flanged and welded into position. Hardened steel liners are provided at the horns and the horn stays are steel castings. Laminated bearing springs with equalising beams are fitted above each axlebox and housed within the side frames. A cast steel bolster is fitted and suspended from the transoms by means of swing links and trunnions. A cast steel bogie centre plate is bolted to a seating on the bolster and provided with a wearing plate. Mild steel casehardened rubbing plates are attached to the mating faces of the bolster and the transoms and to the seats on the top of the bolster. Provision has been made for mild steel packers under the bolster bogie centre plate and the bolster top rubbing plates.

Modern Australian Locomotives—

No. 5801, first of the new 58 class 4-8-2's introduced last year on the New South Wales Railways, is an impressive sight as she rounds a curve near Flemington Electric Car Sheds, on the Enfield Goods Lines. The four-track Main Suburban Line can be seen in the background.

(N.S.W.R Official Photo.)



FIRST MAINLINE DIESEL FOR N.S.W.R.

Standing on the Carriage Works Sidings at Redfern, N.S.W., No. 4001, a 1760 h.p. Alco-GE diesel-electric locomotive, presents a brave sight in N.S.W.R. green and gold livery, with red buffer beams. The latter, with the side buffers, distinguish these new machines from the standard American design. Nos. 4001 and 4002 were to make a trial trip with a freight train from Enfield to Broadmeadow (Newcastle) on 1/12/51. (Photo by Noel Reed.)

NEW LOCO FOR BROKEN HILL

Closely resembling the new W class 4-8-2 of the Western Australian Government Railways, No. 22 "Austin Hawick" is the first of four new locomotives built by Beyer Peacock for the Silverton Tramway Co., Broken Hill, N.S.W. Very far from the conventional idea of a tramway, the Silverton line handles heavy ore traffic, plus passengers and general freight between the Silver City and the South Australian border at Cockburn, the S.A.R. taking over from that point.—(Builder's Photo.)

The new Silverton Tramway 4-8-2's were designed specially to burn low-grade coal, and with a light axle load. Specifications include two cylinders 16 in. x 24 in. 200 lb./sq. in. boiler pressure, with 48 in. drivers, giving a tractive effort at 85% B.P. of 21,760 lb. 5 tons of coal and 3000 gallons of water help to make up the total weight in working order of 100 tons.

The axleload is only 9.75 tons. Gauge of the line is 3 ft. 6 in.

NEW V.R. DIESEL SWITCHERS
F Class 0-6-0 Type

The following are details of the Victorian Railways new diesel-electric 0-6-0 shunting locomotives.

The main engine is English Electric type 6 K.T. having 6 cylinders 10 in. bore by 12 in. stroke, designed for a continuous output of 350 h.p. The traction generator is type E.E. 801 direct coupled to the main engine; it is designed to give 441 amperes at 430 volts, with a maximum speed of 680 r.p.m.

Two traction motors are fitted, one to each of the outer axles. The motors are E.E. 506 of 115 h.p. capacity and are axle hung, frame suspended. All three axles are connected by means of outside coupling rods, so that the whole locomotive weight is available for traction.

The locomotive is of the conventional end-cab design, measuring 25 ft. 9 in. over the headstocks. The axles are equally spaced at 5 ft. 9 in., the overhang at the radiator end being 6 ft. 9 in. and at the cab end 7 ft. 6 in. With side buffers fitted; the overall length is 29 ft. 3½ in. The headstocks are fitted with an automatic coupler pocket, but for the present all but one locomotive will be provided with a transition drawhook and screw coupling. One locomotive will have automatic couplers for working passenger-car stock at Spencer St.

The wheels are 48½ in. diameter and the 11 ft. 6 in. wheelbase will allow the locomotive to negotiate 160 ft. radius curves.

At full horsepower the starting tractive effort is 33,000 lbs. at 7.5 m.p.h. The factor of adhesion is 3.2.

The class allotted is "F" with Nos. 310-319 inclusive.

The locomotives were built by the English Electric Co. Ltd.

A2 Class on the Way Out

Present indications are that the A2 class 4-6-0's of the Victorian Railways will soon be but a memory. Of the 185 engines of this class, 175 were built at Newport Workshops, 5 at Ballarat, and 5 at Bendigo, the first being placed in service in 1907. They were equally at home on passenger trains or in freight service. These duties are now being undertaken increasingly by the new R class 4-6-4's and the latest batch of N class 2-8-2's. Already 15 A2's have been

scrapped and 9 are on the condemned list. The class leader, No. 825 (formerly No. 572) is still in service, however, having run over 1,113,000 miles. Last to go will probably be the 60 "Walschaert" A2's, an improved version introduced in 1915, all of which were converted to oil burning.

There is no doubt that the A2 stands high in the estimation of Victorian railwaymen and railway enthusiasts alike. Recent press claims seem a little too sweeping, however. It is likely, for instance, that, even in this country, the statement that there are "few, if any, locomotives in the world with a better record" could raise an eyebrow. Be this as it may, the A2's have certainly done a fine job.

V.R. LOCOMOTIVE NOTES

One of the new F class 350 h.p. diesel-electric switchers of the Victorian Railways, No. 319 has been allotted to the Melbourne passenger yard. In contrast to the sombre black of other engines of this type, No. 319 has a coat of red paint. Underframe, buffers and headstocks are black. Automatic couplers and transition gear are fitted, No. 319 being the only F equipped.

T.G.R. MAINLINE DIESELS
Further Details

Further to the detailed description of the new X class mainline diesel-electric locomotives of the Tasmanian Government Railways given in our August-September, 1950, issue, the following additional information may be of interest.

These machines are fitted with a "Teloc" combined speed indicator and recorder, placed in the cab so as to be seen conveniently by the locomotive driver. This equipment is manufactured by the Hasler Telegraph Works, London, and is their model RT835.

A visual indication of speed in m.p.h., time of day, and total mileage run, is provided on the face of the recorder, whilst a chart is used to provide a graphical record. The chart drive is such that, when the locomotive is running, it is driven from the road wheels, the paper moving at the rate of 5 mm. per mile. However, when the loco is standing the chart is driven from the clockwork mechanism at a rate of 5 mm. per hour.

Recorded on the graph is the time of day (with the numerals of the hour punched in the chart, and the minute intervals indicated by the sweep of a pen), speed in m.p.h., brake applications, and distance travelled.

N.Z. ORDERS SWITCHERS
B.T.H. 1000 h.p. Locos

A contract has been placed with the British Thomson-Houston Co. Ltd. for ten diesel-electric shunting and transfer locomotives of 1000 h.p. for the New Zealand Government Railways. There will be two engines in each locomotive, each a Paxman 12-RPH Series 2, of 500 h.p., while roadworthy weight will be about 70 tons. Maximum speed is to be 57 m.p.h.

Sub-contractor for the supply of the mechanical parts of these locomotives is the Metropolitan-Cammell Carriage & Wagon Co. Ltd.

Diesel-Mechanical Locos

Builders are being sought by the N.Z.G.R. for 25 diesel-mechanical switchers in the 200-350 h.p. range.

QUEENSLAND RAILWAYS
Heat Troubles With New Garratts

The order for 30 Beyer Garratt locomotives for the Queensland Railways was completed recently with the arrival of the last five at Brisbane. Many of the Garratts already delivered have been doing good work,

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proof of which may be seen in the colour of the engines — the red jacket has already disappeared beneath an overall black. Following complaints, tests have been made of operating conditions with Garratts on the Toowoomba line. Firstly a goods train was taken through, and the cab temperature was found to be 26 degrees higher than in a standard engine. Then, on two successive Mondays, Garratts hauled the 7.45 a.m. Sydney Mail (via Wallangarra). On each occasion, Toowoomba was reached 30 minutes late. As a result of these tests, Garratts will not run on the Toowoomba line.

Air-conditioned "Sunshine Express"

The new air-conditioned trains for the Sunshine Route will not be ready in time for the Royal Tour, but should be in service by August, 1952. It is hoped that the new diesel-electric locomotives will be ready in time to haul them.

Alterations at Mayne Junction

It is proposed that the Enoggera-Ferny Grove line should take a new route through Mayne Junction. This would entail building a new bridge across Breakfast Creek. Mayne Junction, it is hoped, will house the new diesel-electric locos, the air-conditioned trains, the suburban electric rolling stock and, possibly, ordinary carriages. The existing loco sheds will be moved to Virginia.

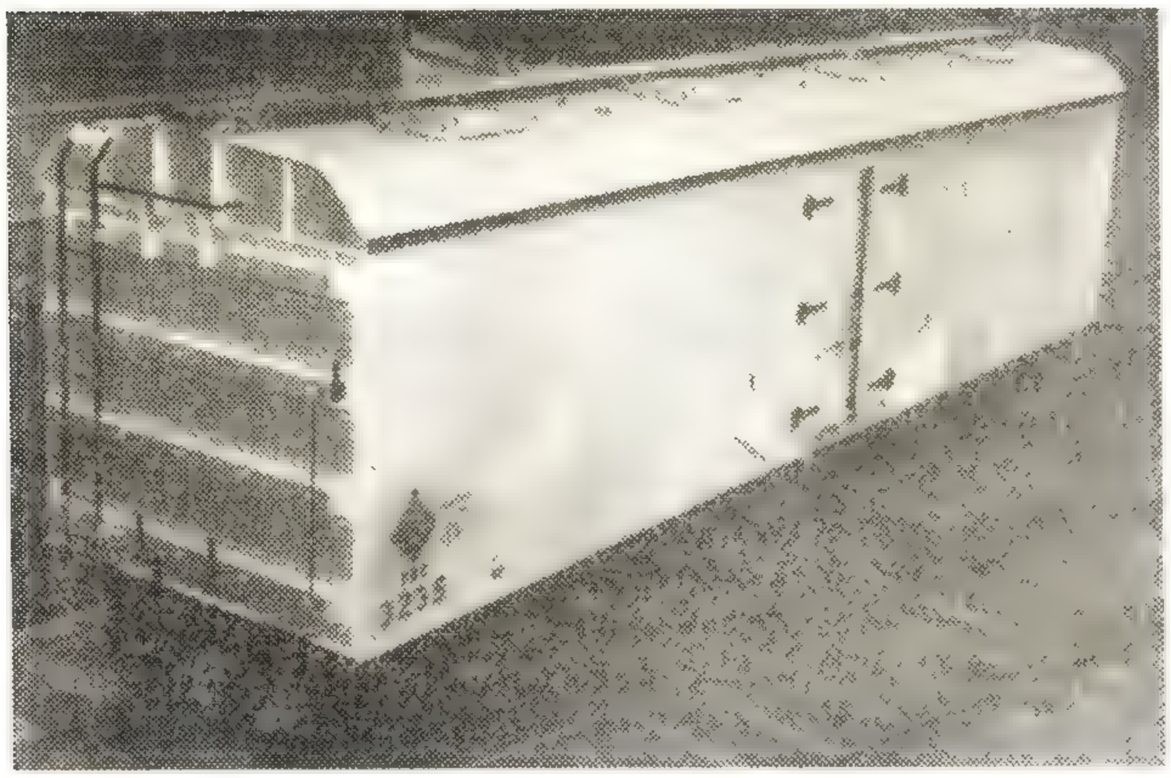
The truck and wagon repair shops at Normanby will be removed to Wacol to give more siding space at Roma Street.

Extra Tracks for Suburban Lines

The earthworks for the Corinda-Roma Street quadruplication are well under way, and quadruplication between Roma Street and Northgate will follow. This will involve construction of new tunnels between Roma Street and Brunswick Street.

Duplication of the Kuraby line is almost complete. The section between Cooper's Plains and Kuraby is now working. A new station has been built at Salisbury, about 30 yards from the old station, and eliminating a bend. The section between Cooper's Plains and Rocklea is expected to be in use by Christmas, and the last section, between Rocklea and Yerongpilly, should be working by July, 1952. By this time it is hoped that engines heavier than B15's will be able to run to Southport; all bridges have been strengthened.

The duplication of the Newmarket-Mitchelton line is going ahead well, and the first section—Newmarket



New, all-steel, 32-ton, refrigerator car for express operation, New South Wales Railways. These cars, classed TRC, are used on Inter-state passenger and fast freight trains and represent the most recent development of this class of vehicle. (N.S.W.R. Official Photo.)

to Enoggera—should be completed soon. Extra sidings are being put in all over the suburban system, and realignments are taking place on the Petrie line. Heavier rails (96 lb.) are being laid on the Sandgate line.

New Freight Cars for C.R.

New rolling stock is being sought by the Commonwealth Railways for their 3 ft. 6 in. gauge lines. Tenders close on 15/1/52 for the supply and delivery of the following freight cars (without trucks): 60 cattle cars, 50 box cars, 75 gondolas, and 12 sheep cars.

S.A.R. Wants Reefers

South Australian Railways require 50 4-wheel refrigerator cars for their 5 ft. 3 in. gauge lines. The cars are to be of 1,000 cu. ft. capacity, and tenders close on 20/12/51 for their delivery f.o.r. at Islington Workshops.

Tasmanian Railways

The first of 26 express freight cars under construction at the Launceston Railway Workshops was delivered recently for service on the 3 ft. 6 in. gauge Tasmania Railways. Designed for use on passenger trains, the new cars are of 25 tons capacity, and are 36 ft. in length. Two wide sliding doors are provided on each side, with large louvre ventilators in each side just below the carlines. Interior fittings are provided to enable freight to be stowed securely.

New Suburban Cars

New suburban passenger cars for Hobart may be built in Germany. Australian and British firms failed to tender, and prices quoted by several German firms compared favourably with those estimated by the Transport Commission for construction in Tasmania.

TASMANIAN RAILWAYS TACKLE STAFF SHORTAGE

In common with all Australian railway systems, the T.G.R. is suffering from a severe shortage of staff. A novel method of overcoming this shortage was undertaken by officers of the Traffic Branch recently. These officers toured the principal towns and broadcast over a public address system, giving the advantages of permanent railway employment. As the time of arrival of the public address car at each centre was well advertised, large crowds were in attendance, and favourable results obtained.

Diesel Shops; Fuel Storage

Now that the 22 X class diesel-electric locomotives are in service, provision is being made to ensure that they receive adequate servicing and fuel facilities. A diesel service shop to handle not only these new locomotives but diesel rail car stock as well, is being constructed at Launceston. A 30-ton overhead crane will be installed in the main bay, with a 25-ton crane in the fitting shop. To enable the railways to purchase fuel oil in bulk, and to provide a reserve against delays in supply, two 3,000-ton tanks will be used as bulk storage at Hobart. In addition, 12,000 gallon overhead fuelling tanks will be installed as follows:— Hobart and Launceston, 2 each; Devonport, New Norfolk and Smithton, 1 each. The ability to make bulk purchases of oil will lower fuel costs considerably.

New Freight Cars

The T.G.R. are seeking builders for 140 bogie freight car underframes, including bogies. Tenders close on 30th November next.

V.R. NOTES

The new bright red colour for country passenger cars is reported to have been introduced owing to the inability to obtain adequate supplies of the standard Victorian Red. The new colour has been criticised as being unsuitable for the Victorian climate, particularly in the summer, but it is certainly more attractive than that formerly used.

CONTRIBUTORS

For news items in this issue, we thank Messrs. N. Reed, F. Andrews, W. Pearce, R. Kelly, K. Magor.

VICTORIAN 10-WHEELER

Typical of the "Walschaert" A2 class 4-6-0's of the Victorian Railways is No. 944. Notes on the retirement of these engines will be found on pages 6-7 of this issue. (V.R. Official Photo.)

"INTERURBAN" CARS TO BE BUILT

More Suburban Cars Too

Railway enthusiasts in New South Wales have been startled to learn that the Department of Railways is seeking tenders for "interurban cars". These are in point of fact multiple unit cars for country services, and will be required for the mainline electrifications to Lithgow and Newcastle. They will be similar in function, if not in appearance to the mainline electric stock of the Southern Region, British Railways.

Also to be ordered are numbers of suburban cars. The actual tenders called are:

(1) Closing 30.4.52 (extended from 6.2.52):—For the manufacture, supply, and delivery of, alternatively:

(a) 102 electric suburban motor cars,
198 electric suburban trailer cars.
(b) 153 electric suburban motor cars,
247 electric suburban trailer cars.
(c) 205 electric suburban motor cars,
295 electric suburban trailer cars.

(2) Closing 30.4.52 (extended from 30.1.52):—For the manufacture, supply, delivery, erection, and testing of Electric Train Equipments for alternatively:

(a) 70 motor and 70 trailer cars for interurban lines.
(b) 102 motor and 98 trailer cars for suburban lines.
(c) 153 motor and 147 trailer cars for suburban lines.
(d) 205 motor and 195 trailer cars for suburban lines.

Perusal of the figure suggests that, after allowing the usual higher proportion of motor cars to trailers, 100 of the latter are intended to replace existing stock—presumably the ex-steam wooden cars.

Equipment Wanted

Other tenders called include one for the "Supply and Delivery of 64 No. 2200-volt indoor, metal enclosed switchgear units, with associated equipment" for the Eastern Suburbs Railway. In addition, 39 steel-frame buildings are required for sub-stations, stores, etc., for the Lithgow electrification.

Wooden Cars Going

The wooden T cars, converted from steam suburban cars, have long been under sentence, but delay in obtaining new stock necessitated their retention. Some, which had been farmed out for steam suburban service —mostly on workshops runs—had actually returned to electric operation.

Now they are really on the way out at last. Thirteen were observed on a siding at Flemington car sheds, where they are believed to be awaiting scrapping.

The 7 and 8-car all-steel, air-conditioned sets used on long distance, steam-hauled daylight express services are to be seen regularly at Flemington Electric Car Sheds, where they receive routine maintenance on their airconditioning plant.

N.S.W.R. Suburban Electric Lines

Work is going ahead in no uncertain fashion on the Eastern Suburbs Railway, and other projects in the Sydney Suburban Area. See the October/November issue of "Electric Traction" for a full account of this and other electric railway happenings.

THE AUSTRALIAN
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The Electric Railroaders' Association (New York)
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Nederlandsche Vereeniging van Belangstellenden in het Spoor-en Tramwegwezen
The New Zealand Railway and Locomotive Society
The Central Electric Railfans' Association (Chicago)

President: J. RICHARDSON, Esq.

The A.E.T.A. advocates the retention, extension and modernisation of electric railways and tramways, whilst in no way opposing the use of rail-less vehicles in their proper sphere. All who have at heart the interests of electric rail transport are eligible to join. Communicate with the Secretary:

Mr. J. Beckett, 22 Kirkwood Avenue, SANDRINGHAM, S.8., Vic.

or one of the following representatives:

ADELAIDE: Mr. J. Buckingham, 40 Cheltenham Rd., Cheltenham, S.A.
AUCKLAND: Mr. G. C. Stewart, 74 Fowlds Ave., Sandringham, W.2
BALLARAT: Mr. W. Jack, 31 York St., Ballarat East, Vic.
BENDIGO: Mr. L. Marshall-Wood, Laanecoorie, Vic.
BRISBANE: Mr. F. A. Andrews, 35 Stephens St., Morningside, Q'ld.
CHRISTCHURCH: Mr. A. C. Bellamy, 70 Wildberry Street, Woolston. Christchurch, N.Z.
LAUNCESTON: Mr. K. Flood, 140 Wellington St., Launceston, Tas.
NEWCASTLE: Mr. K. Magor, 38 Gulliver St., Hamilton, N.S.W.
PERTH: Mr. D. C. Tyler, 232 Crawford Road, Inglewood, W.A.
SYDNEY: Secretary Sydney Branch, 22 Cove St., BIRCHGROVE
WELLINGTON: Mr. R. D. Grant, 15 Scapa Terrace, Karori.

MELBOURNE BRANCH meets third Friday each month at 8 p.m. in Room 11, V.R. Institute, Flinders Street Station.

SYDNEY BRANCH meets third Thursday each month at 8 p.m. in Room 2, Railways Institute, Devonshire Street.

VISITORS ARE ALWAYS WELCOME.

HOLIDAY BY RAIL

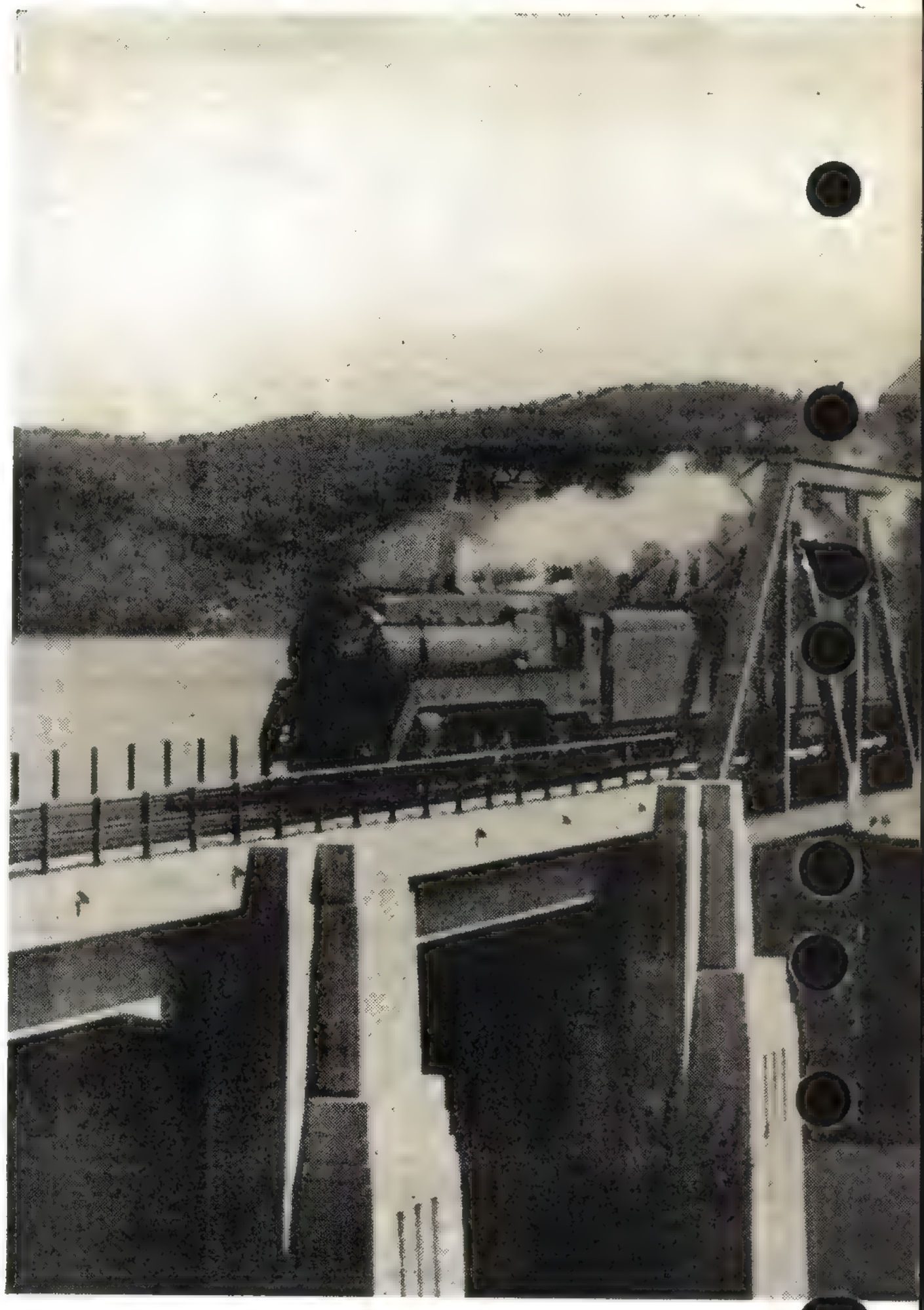
BY C. EINSIEDEL

(Continued)

Of the popular daylight express services of the New South Wales Railways, the first to be introduced was that now operated three times daily in each direction between Sydney and Newcastle. Now known collectively as the Newcastle Express, these trains attracted Mr. Einsiedel on the next stage of his fourteen-day rail tour.

Perhaps it could be said that I was back in the silk department next morning. The second week started with a run to Newcastle in the 9.00 a.m. "Flyer" which is an air-conditioned train of new stock similar to the Riverina Express. but with refreshment service to seated passenger instead of in a buffet car, owing to the comparatively short trip. The tonnage of the 7-car set behind 3811 was 293 — only 17 tons less than the schedule load. On the two trains which provide the "Flyer" service of the three trips daily in each direction, the diesel motor driving the generator for lighting, airconditioning, and the buffet car, is in the van (PHS) at the front of Down trains; it makes so much noise that conversation with the engine crew at Central is too much of an effort.

Away on the dot, signal checks at Croydon and Burwood prevented maintenance of the 11-minute schedule to the stop at Strathfield; this is the fastest timing for any train in this direction. After crossing the Parramatta River at Meadowbank, there is a rise of 547 feet in the 9¾ miles to the next stop at Hornsby, and it was covered in 16½ minutes. Speed got down to 19½ m.p.h. on the 1 in 44 grade just before Pennant Hills, after a mile through Cheltenham at 1 in 44, and followed by a similar distance at 1 in 50 through Beecroft. Curves restrict speeds along the top of the ridge from Hornsby to Cowan but, although 2 min. 20 sec. late leaving the former, Woy Woy, 24 miles further on, was passed 20 sec. early. Perhaps the most delightful part of the trip is the approach down the grade to Hawkesbury River, and thence on to the entrance to Woy Woy tunnel (the longest in Australia — just over a mile).



Soon after crossing the new bridge over the Hawkesbury (see illustration this page), there is a level run of three miles along the bank of Mullet Creek. Surely nowhere else is such a magnificent stretch of water, despite the name. The Up end of the tunnel is approached by nearly a mile of 1 in 40. Running time through the bore, on a falling grade of 1 in 150, was 1 min. 31 sec.

It is worth noting that the "Flyers", like the "Spirit" in Victoria, are timed to the half-minute; Gosford (50¼ miles) was passed dead on time at 10.16½ a.m. Between Lisarow, 4½ miles further on, and Morriset, where the train was half a minute early, the curves ease to some extent, and speeds become respectable, the 22¼ miles being covered in 23 min. 20 sec. The stop at Broadmeadow was a minute early but, owing to the run of just over two miles from the Hamilton stop to Newcastle taking 6 minutes the arrival was two minutes late, at 11.32 a.m. Although most of the country after the Hawkesbury bridge is undulating to hilly, the highest altitude reached is 180 feet at the Up end of the Adamstown tunnel, while Civic and Newcastle, both at four feet. are nearer to sea level than any other station in the State.

Engine 3811 returned with the 4.50 p.m. "Flyer" which comprised the set that had come in on the 12.50 p.m. "Flyer" from Sydney. The 38's on expresses can take a passenger load of 325 tons up to Cowan from Hawkesbury River, involving a rise of 616 feet in 5¼ miles. Average grade is 1 in 45½, with one sharp pinch of 1 in 39, and curves are down to 11 chains radius. If a stop is necessary at Hawkesbury River, however, the resultant loss of momentum means that the load has to be reduced to 305 tons, or a banker obtained.

The 4.50 p.m. schedule is 3 minutes faster than the Down, due to the elimination of stops at Hamilton and Broadmeadow. On the Down trip I was not able to time the mileposts as my seat was on the right-hand side of the train. Mileposts throughout New South Wales are on the Down side of the line and, owing to their proximity to the track, are never easy to read at speed, except when travelling in the Up direction on double track. The figures are rather small, but I liked the simple individual designs of the quarter, half, and three-quarter mile posts.

With a start one minute late, the train passed Broadmeadow one minute ahead of the schedule which allows 7½ minutes for the first 3¼ miles. This margin

Newcastle Express hauled by a streamlined 38 class Pacific of the New South Wales Railways crossing the Hawkesbury River bridge.
—(N.S.W.R. Official Photo)

BOOK REVIEW
"The Taff Vale Railway"
By D. S. Barrie
(St. Alban's, England — The Oakwood Press)

The Oakwood Library of Railway History is already well known to the discerning connoisseur of railway literature. Although unpretentious in appearance, these little books are providing an extensive fund of well-written and accurate information on the smaller railways of England during the pre-grouping era. Well up to standard is this comprehensive history of one of the vigorous lines of the mining area of South Wales. Most of the locomotive classes are illustrated, with a selection of passenger rolling stock; a detailed map is included, and there are several pleasing "on-line" views to give the right atmosphere.
(44 pp., 7¼ in. x 5 in.— Our copy from Meadmore Models, 7/6.)

"The Live Steam Book"
By "L.B.S.C."
(London — Percival Marshall & Co. Ltd.)

"L.B.S.C." and his writing need no introduction to builders of live steam minature locomotives. A contributor to "The Model Engineer" since 1924, he is essentially a practical man and has built many steam locomotives which have attracted attention in full-size railway circles. His earlier book, "Shops, Shed and Road", has been out of print for some time, and the new work takes its place as a collection of illustrated notes describing fully "tried, tested, and guaranteed" components and accessories for small steam locomotives intended for "real work". There are five full-page and seven other illustrations, as well as 177 full detailed diagrams.
(212 pp., 9 in. x 6 in., hard cover — Our copy from McGill's Agency, 21/-.)

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s maintained right down to Gosford and, 14½ miles ther on, at Hawkesbury River, the "Flyer" was 3 minutes early. This was due to some well-sustained running between mileposts 73 (1½ miles north of Wyee) and 53 (2¾ miles north of Gosford), the 20 miles being ered in 19 min. 33 sec. Fastest time for a mile was seconds (72 m.p.h.) from milepost 66 through Warnervale. Speed up the Cowan bank averaged just under 23 m.p.h., dropping to 19 m.p.h. on the short 1 in 39 just before the first tunnel. Approaching Hornsby early, a signal stop ensured an on-time arrival, ch was also the case at Central at 7.17 p.m. ough the engine was not quite able to maintain t 17 minutes allowed for the 13¾ miles down the e and around the reverse curves in the suburban area between Hornsby and Strathfield, I thought that the run over that section was a very slippery affair.

And Now for the West

The next day I commenced a round trip which lasted nine days, and took me as far as Bourke and Brisbane. A start was made with 3821 in front of 8 cars and a (317 tons) on the 8.30 a.m. "Central West Express" to Dubbo. The best along the Parramatta-Penrith run was 7 min. 1 sec. between mileposts 22 and 29, with 56 seconds for the fastest mile (64.3 m.p.h.) through Mount Druitt. After an unscheduled stop at Penrith, the Way and Works Branch was found to have possession of the Up line for the breakdown plant to clear away cars concerned in the derailment of a Freigh near Emu Plains the previous week. The 38 kept speed up to 24 m.p.h. on the climb to Valley Heights where water was taken, and got the assistance of 5013 as a banker for the run to Katoomba. It takes some experience to know just which is the most severe part of the climb, but with speed down to 18 m.p.h., my choice goes to the Bullaburra-Wentworth Falls section, which includes 1¼ miles at 1 in 33. After Katoomba, the grades ease to short lengths of 1 in 66, but there is certainly no easing of curvature. Soon after crossing the summit of the Dividing Range, between Bell and Newnes Junction, the ten Lithgow tunnels are encountered and, on the falling grade, are passed through in 5 min. 34 sec. Brakes get plenty of use down the 1 in 42 from Ziz Zag Box until the engine stops under the coal stage just outside Lithgow (the 38 runs right through to Dubbo). This took 9 minutes, and the departure from Lithgow was late by 6 minutes, which

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was recovered by the time Bathurst (149 miles) was reached at 1.23 p.m. The rear car (MCE) was taken off here, reducing the load to 268 tons.

(To be continued)

ADELAIDE RAILFAN TOUR

7-car Train Hired

Tours by special railcar are an established feature of the life of a railway enthusiast in Sydney or Melbourne, but it remained for Adelaide to charter a 7-car steam train for such an outing.

On Monday, 8th October (Eight Hours Day), the special, composed of side-loading cars, and hauled by Rx class No. 25, left Adelaide's imposing station at 1.45 p.m. It returned at 4.45 p.m., having followed the normal route to Outer Harbour, thence via the Birkenhead Wharf area, and the Dry Creek-Wingfield loop, the last two-mentioned routes being normally freight only. Through Birkenhead streets speed was restricted to 5-10 m.p.h., a pilotman being carried on the engine to check points en route. A refreshment stop was made at Outer Harbour. Fares charged were extremely modest, being only 3/8 for adults, and 1/10 for children. All profits went to the Somerton Home for Crippled Children.

The tour was organised by Mr. H. N. Eustis, proprietor of the Hobby Shop, to whom our congratulations go for such an enterprising and praiseworthy effort. It is hoped to arrange further tours of this kind.

The photo of this corner of Bill Lowry's Balwyn Pacific Railroad was not quite suitable for block-making, but we thought you would like the scene—one of the most realistic we have seen. The Freight Shed at Mabalon is visible in the background. Note the V.R. type semaphores. The B.P.R. is 0 gauge. The photographer was Des Ramsay.

MODEL RAILWAYS in Australia

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A LETTER FROM THE ARMCHAIR

Hello there!

The outlook for model railroading is, at the moment, far from bright. The new sales tax here has increased the price of almost everything we require; imports from Britain are difficult, owing to the impact of defence requirements over there on manufacture of metal products; the prospects of the dollar situation easing seem to have receded once again. Yet, somehow, modellers have always carried on, and no doubt they will continue to do so. Australian manufacturers are still battling to give us a good range of kits, parts, and completed models — often at some sacrifice to themselves — and they deserve all the support we can give them. Some months ago a correspondent observed that he could not find any of the Australian equipment of which we had written, except some O gauge coaches which were "very definitely tinplate". Apparently this gentleman does not realise that the term "tinplate" does not refer to rolling stock made from that metal, but to the "glorified toy" approach to model railways. The cars to which he referred (and which are still available) are to $\frac{1}{4}$ in. scale in everything but length — the latter for obvious reasons — and are sturdier and cheaper than the only comparable imported vehicles. The same manufacturer has quite a range of HO cars, both passenger and freight, but has to battle with prejudice against anything made locally, as well as unfair comparison with prices of inferior imports — inferior, that is, in that they are not of scale dimensions and are of less robust construction. Another firm produced really good locomotives at prices admittedly high, but well below those of certain well-known British brands much in demand: they had to give up through lack of demand. Most of the trouble seems to be that we tend to be rather parochial in our railway interests. A Victorian loco is of no interest to modellers in New South Wales; the Victorians couldn't care less about N.S.W.R. air-conditioned cars, however well made. Yet, it must be obvious that we simply haven't the population to allow a manufacturer to produce representative models of locos and cars from all Australian systems. And why should a South Australian sniff at a Queensland Railways freight car yet buy a model of one from Germany or the U.S.A.? Perhaps there is no answer to all this, or is that being too gloomy?

Anyway, here are a few items of interest from the model shops, concerning both local and imported equipment:—

ATTRACTIVE NEW MODELS
"Rivarossi" Trains

Further examination of the new Italian-made "Rivarossi" trains on sale in Melbourne has done nothing to dampen our enthusiasm for these neat models. Some may object to the plastic construction used for most car bodies, but it does not in any way detract from the appearance, and appears to be perfectly rigid; certainly it makes possible much more elaborate and detailed models than could be obtained for the price in metal construction. All rolling stock is scaled from Italian State Railways prototypes which are much longer than their British counterparts. The modern passenger cars in particular approximate American vehicles in length. Being of similar design, except for the recessed end doors, they have been used (with appropriate changes in the colour scheme) in the "Hiawatha" sets, as have the matching baggage cars. The latter have side lookouts for guards, however, which is distinctly non-American. The "Hiawatha" locomotives, in contrast, are genuine reproductions in miniature, as is the diminutive B. & O. 4-wheel switcher. The impressive nature of the "Hiawatha" model may be gauged from the length of the train — nearly 4 ft. 6 in., a very long 3-car train in HO gauge; wide radius curves are used, and some 20 feet of track are provided.

The 3-rail track is particularly well made, and that "tinplate" look is completely absent. 3-rail, steam-outline locos emit smoke, and will operate on either A.C. or D.C. Cars in this series have sprung buffers and electric lights.

Unlike English models, the 2-rail trains are cheaper than their 3-rail counterparts. The cars for 2-rail operation, however, lack the electric lighting.

Kits for 2-rail locos are available, at a very real saving in cost; they do not involve any complicated assembly problems.

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(The "Rivarossi" trains may be seen at Meadmore Models, Melbourne.)

New Model Shop

Readers will be interested to konw that Mr. Frank Slovnik, of Austral Railway Models, has opened a showroom at Cremorne, Sydney (see advertisement elsewhere in this issue). When in Sydney, we suggest that you drop in on this hard-working model railway supplier.

Buyer's Guide

You may have noticed the absence of our "Shopping Around" section. Whilst we shall still comment from time to time on matters of interest to model railroaders we recommend the A.M.R.A. "Buyer's Guide" as the best means of keeping in touch with the latest developments in model railway equipment available in the shops. This Guide is issued regularly to all members of the Australian Model Railroad Association as part of A.M.R.A. service. Comment is completely unbiassed, and quite frank. It would be well worth your while to join the Association now. (See the Club Notice Board for address.)

N.S.W.R. 4-6-0

Although it is very definitely no scale model, the new 4-6-0 steam-outline, O gauge loco by Ferris is worth seeing. It is quite recognizably the N.S.W.R. 36 class it purports to be, even to the famous hump-backed boiler. Like all Ferris products, the loco has a first-rate mechanism, but we raised an eyebrow at the crackle finish — hardly the thing in model railways although it does eliminate that unreal glossiness of so many commercial models.

Most model shops have the new loco.

See you next month,
THE ARMCHAIR MAN.

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David Burke at the throttle of a fine model Pacific on the miniature railway of Dr. Bush, Melbourne, Victoria. Dr. Bush's railway is one of the finest garden railways in this country.

MODEL RAILWAY MANUFACTURERS

Model railway manufacture in Australia, on anything like a mass-production basis, is a comparatively new thing. Most of our present manufacturers are model railroaders themselves. Often they began by making odds and ends for their own layouts; friends became interested, part-time manufacture began — usually at no little personal sacrifice.

Then came the really hard part — to decide whether to go in "full time" or not. Once the plunge was taken, some fell by the wayside the others are the manufacturers who serve you now. Despite popular impressions, they are not money-making, grasping profiteers. Our population limits the demand very severely, but it is just as expensive tooling up and producing dies and jigs for a hundred items as for a thousand. Costs, therefore, must be higher than for much larger firms overseas. Yes, somehow, the Australian manufacturer contrives to sell at a reasonable price and, in more than one case, produces a better item at lower cost than the imported article. In fact, we know of one case where retailers suggested an increase in price because the relevant item was so much better than a more costly overseas product.

We thought you should know more about these men, who make your hobby possible. Here, then, is the first of a series of brief sketches.

AUSTRALIAN TRAMWAY ALBUM

Second Edition

It is regretted that costs and conditions in the printing industry have made it impossible to publish the promised 2nd Edition of the Australian Tramway Album this year. The book will appear as soon as possible.

The Album, which will contain more and better pictures than the original edition, will cost at least ten shillings (10/-), on present indications. However, all who have already paid, either at the original price of 5/-, or at the current price of 7/6, will receive their copies without extra charge.

Similarly, copies paid for now, at 7/6 each, will be sent post free, without extra charge, when the book becomes available. (For readers in U.S.A. and Canada, the price is one dollar.)

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O Gauge House offers you the choice between two addresses. If you go to 190 Parramatta Road, you will find an impressive lane beside a factory. Follow this for a few yards, and you will be surprised and delighted to discover a miniature race track, a speedboat pond, an extensive model railway layout, and the neat clubhouse of the Sydney Society of Model Engineers. At one side of the clubhouse, there is a gate, and, beyond the gate, O Gauge House. Should you select 5 Curt Street, the approach is less distracting, but you will arrive at the same place.

Don't be deceived by the lack of an impressive entrance. Once in O Gauge House you will get all the impressions you can absorb! There you will find every stage of model railway manufacture from raw materials to the finished product — but too many of the latter, though, as kits are best-sellers.

When we first met Fred. Stewart he was an enthusiastic model rail-

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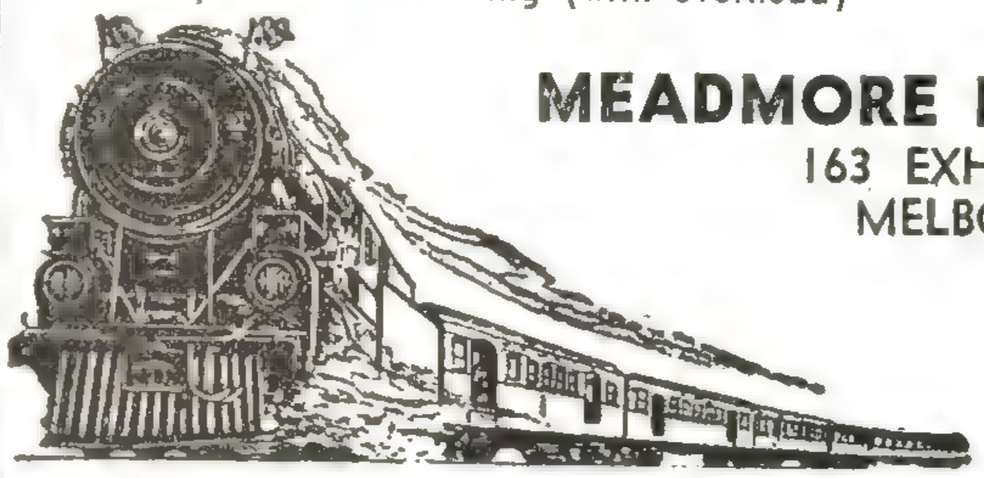

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roader devoting his spare time to making parts for other model railroaders. Fred. always held firmly to certain standards: don't be greedy — the profits will come; don't be distrustful—a man cheats you only once; design everything on a sound engineering basis.

There were imitators; one of them was good enough to buy one each of Fred's castings and turn out replicas from sand moulds. The imitators have disappeared, but O Gauge House is very much still there—and growing. In addition to Fred. Stewart, there is son, Ray, as well as Ian Morr and such staff as the industrial situation permits. All are keen model railroaders, and they still maintain Fred's standards. We don't imagine that anyone connected with O Gauge House will ever be millionaires, but neither will you ever be "seen off" through buying from them. And we wish this magazine could be run as efficiently.

Because O.G.H. kits and parts are not sold through retailers, it may surprise many to know that they have far and away the largest range ever produced by one concern in Australia. (They are not anti-retailer, but find it almost impossible to cope with the existing demand, let alone to attempt to supply retail shops.)

All O.G.H. locomotives and rolling stock, with the exception of Santa Fe diesel-electric locos. and a 50-ton S.A.R. flat car, are 7 mm. scale reproductions of New South Wales Railways equipment. The range is extensive (there are six locos.) and it is possible to buy any component, or complete kits in partly-finished form. Suburban electric multiple-unit rolling stock is included.

In addition, O Gauge House has most of the small metal sections, screws, taps, dies, etc., which have led most of us, in the past, on a weary, often fruitless, round of the hardware shops.

All this, and much more besides, is covered in the O.G.H. catalogue, the purchase of which we consider money well spent.

Outdoor layouts being popular in New South Wales, O Gauge House products are designed with outdoor conditions in mind. This makes fine scale somewhat out of the question, but detail is good and proportions correct, nevertheless.

On one point we must take issue with O Gauge House—that is the use of 24 volts. Mr. Steward's arguments in favour of this are perfectly sound, as well as being more than a little forceful, but the fact remains that 12 volts is the accepted standard in Britain,

Canada and the U.S.A., and insistance on the higher voltage brings trouble when equipment from various sources is mixed.

However, a locomotive is the most important part of a train, and we have yet to see the locomotive which will out-perform the O.G.H. jobs. If you are able to pay him a visit, Fred Steward will show you what we mean!

MINIATURE FIGURES

Realistic human figures have long been a problem in the provision of convincing scenery for model railways, particularly in the smaller gauges. The best we have seen for the HO/OO layout are "Huminitures" in plastic. They include crew, passengers, station staff, and luggage, and are to 4 m.m. scale. We saw them at the Main Hobby Depot.

"BELVART" IS BACK

Pre-war model railroaders in New South Wales will remember Belvart Railway Models and its genial "brass hat," Mr. Will Christie. Belvart aimed to provide as many as possible of the things which model railroaders needed and which they could not get elsewhere. Mr. Christie has long been itching to get started again, and this has now become possible. The mail order price list is free, so you can't very well go wrong!

NEW MODEL RAIL DISPLAY

Hobbyco Pty. Ltd. have opened their model railway basement, which will enable them to devote more attention to the model rail business. The address is 561 George Street, Sydney, and you can buy R. in A. there!

HOBBY MAGAZINE

Many of our readers will have heard of "Hobbies Illustrated," a monthly magazine which caters, as far as possible, for hobbies of all kinds. The model railway section of this journal has increased in size, and improved out of all recognition in recent issues, and is well worth perusal. The use of 17/64 in. scale is perhaps unfortunate, as it is the one scale not provided for by Australian manufacturers, but you will find the articles of interest. We called on the publisher recently and found an enthusiasm for the project which deserves to be rewarded.

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WHAT IS A FERRO-PHILLIAC?

According to Mr. Frank Richards, of Hawthorn, Victoria, it is an American term for a philatelist who specialises in stamps depicting railways. No mean ferro-philliac himself, Mr. Richards showed us an album packed with attractive specimens of ferrophilately (our own word for it!).

Stamp collectors, says Mr. Richards, will be surprised at the material available for this branch of the hobby. Nearly 80 different countries offer stamps depicting railways. Hungary, Belgium, Austria, Russia, and pre-war Germany are the most prominent producers.

Taking the usual care to obtain stamps free from disfiguring postmarks, the collector may sort his stamps into such subjects as Locomotives, Workmen, Stations, Level Crossings, Tunnels, Bridges, Funicular Railways, etc. All these, and such symbolic devices as winged wheels, are to be found. For a few shillings each week, a comprehensive collection may soon be acquired.

LETTERS to the EDITOR

DIESEL v. STEAM. AN AMERICAN VIEW.

The Editor,
Railways in Australia,
Dear Sir,

The letters on the diesel discussion were very interesting. American railroads have dieselised because it saves them quite a large sum on their fixed charges, in that diesel fuel oil costs quite a lot less than does coal, and also the fact that a diesel uses almost 30% less than does a steam locomotive burning oil. Also, the smoother starting of the diesel decreases damage claims to a great extent. In the case of the Pennsyl-

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vania Railroad Co., it costs them less to use diesel-electric locomotives on their non-electric divisions than it would cost to electrify them—though they may electrify the Pittsburgh suburban area for about 30-50 miles. In the case of the Milwaukee Road (C.M.St.P. & P.R.R.) which operates through the largest forest areas in the U.S., it decreases the danger of fires to the zero point, as far as trains are concerned (they also operate the greatest mileage of electrified trackage in the U.S.—650 miles approx.). The same reason holds for the Northern Pacific (no electric trackage) and the Great Northern (81.1 miles of electric track).

Yours, etc.,
P. M. P. KELLY.
Los Angeles, Calif., U.S.A.

Locomotive Power.

The Editor,
Railways in Australia,

Dear Sir,

I should like to point out to your correspondent, Mr. E. H. Joshin (6/7/51), that a man does not buy ten pounds of nails when he wants one. Mr. Joshin seems to be under the impression that our railways are under-powered. Well, they seem to manage fairly well with their low-power locos.

The S.A.R. 520 class maintain 70 m.p.h. on the Pirie run with 12-13 coaches; since this is the capacity of the track, why build bigger locos? Also the 600 class locos run right up to the speed limit on the "Overland" which is not so light. Again, he suggests that the new S.A.R. diesels are too weak. Two of them coupled together will exert 3,500 h.p., which is calculated to haul 700-ton trains over the Hills at 25-30 m.p.h. Greater loads are impossible because vehicles, especially V.R. 4-wheelers often seen on these trains, would tend to pull over and derail on the sharp (10-chain) radius curves. As for 2,250 h.p. diesels being standard in America, the General Motors F3 freight and passenger diesel is 1,500 h.p. per unit, and 1,350 h.p. units are also available for freight haulage.

Admittedly, 2,000 h.p. units are used in passenger service, but they are by no means in the majority. Now the S.A.R. diesels are mixed traffic locos, and therefore, they are above the American average in this respect. The diesel is not inferior to steam where conditions are favourable, such as in America, with home supplies of oil, dense traffic, and long desert runs; out here we have no home supplies of oil, our traffic is not particularly dense, and our long desert runs are quite rightly dieselised.

Regarding the wide, sweeping decision to scrap over 300 locos (more locos than the S.A.R. possesses), this is just too ridiculous when they are still roadworthy, and are valuable on light lines. Of course, when worn out they will be replaced by new designs (e.g. the new 750 class).

(And, by the way, Russia is reputed to have one of the biggest submarine fleets in the world!)

Yours, etc.,
C. R. STEWIEN.
Semaphore, S.A.

FAN MAIL

R. ALEXANDER, Essendon, Vic.—Change noted.

J. W. SIMPSON, Asquith, N.S.W.—See news columns re diesels on "Spirit." There is no chance whatever of the Nowra-Orbost line being built now or for many years to come.

J. WHITAKER, East Malvern, Vic.—Thanks. Wishes noted.

M. D. McKENZIE, Orange, N.S.W.—Thanks. See dates on receipt forwarded last month.

F. M. ALEXANDER, Cremorne, N.S.W.—Thanks.

A. W. MOLONY, Ganmain, N.S.W.—Heartily reciprocated.

T. B. DODDS, Broken Hill, N.S.W.—Thanks for comments.

W. J. FURPHY, Dandenong, Vic.—Sorry, but I must stick to the rule.

F. C. NICHOLS, Ryde, N.S.W.—Thanks. Our news editor most appreciative.

G. SMITH, Nundah, Q.—Always on the lookout for Queensland news. Have more in hand now.

Club Notice Board

AUSTRALIAN ELECTRIC TRACTION ASSOCIATION

MELBOURNE: V.R. Institute, 3rd Friday of each month at 8 p.m. Secretary: J. Beckett, 22 Kirkwood Avenue, Sandringham, S.8, Vic.

SYDNEY: Railway Institute (Devonshire Street), 3rd Thursday of each month at 8 p.m. Secretary: D. Stewart, 22 Cove Street, Birchgrove, N.S.W.

AUSTRALIAN MODEL RAILWAY ASSOCIATION

New members welcomed. Write to the Secretary, 105 Blake St., Reservoir, Vic.

AUSTRALASIAN RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY

SYDNEY: Railway Institute (Devonshire Street), 2nd Tuesday of each month. Secretary: H. McDonald, 3a Oxford Street, Burwood, N.S.W.

MELBOURNE: V.R. Institute, 4th Thursday of each month. Secretary: R. B. McMillan, 21 Evans Court, Toorak, S.E.2, Vic.

BRISBANE MODEL RAILWAY SOCIETY

Meetings held on 1st and 3rd Thursday of each month at 36 Goulburn Street, Kedron, Brisbane, at 8 p.m. Secretary, C. Harrison, 110 Haig Street, Stafford, N.3 (to whom all enquiries should be made). Gauges 0 and H0/00.

Queensland Society of Model Engineers.

Meetings, 4th Monday in each month at 8 p.m. Contact the Secretary, C. H. Garner, "Elsinor", Gray's Road, Gaythorne, Brisbane, Qld.

THE NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area) welcomes new members. Write to the Australian Representative, N.M.R.A., 22 Whish Street, Windsor, N.3., Qld.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street. Unley, S.A.

SYDNEY SOCIETY OF MODEL ENGINEERS

Exhibitions every Saturday afternoon, at their Exhibition Park, 190 Parramatta Road, ASHFIELD, N.S.W.

Meetings last Saturday night in each month at 8 p.m. in Club House, at above address.

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Secretary: R. R. Steward, same address

THE VICTORIAN MODEL RAILWAY SOCIETY meets 3rd Wednesday of each month at 8 p.m. at the Model Dockyard, **Swanston Street, Melb Visitors wel**come. Secretary: J. H. Hooker, 6 Huntinghower Rd., Malvern, S.E.3.

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FOR SALE: "Trains" magazines, Sept. 1949 to Aug., 1951 (24 issues). Price £3 f.o.r. Ganmain. A. W. Moloney, GANMAIN, N.S.W.

WANTED: Bradshaw's Railway Guide; New South Wales and Victorian Railways' Working Timetables. I. J. Connor, 4 Cambridge St., NUNDAH, N.E.3, Qld.

FOR SALE: "Railway Gazette," Mid-1949 to Mid-1951 (2 complete years, including special annual editions). Wotherspoon, 30 Dudley Pde., CANTERBURY, Vic.

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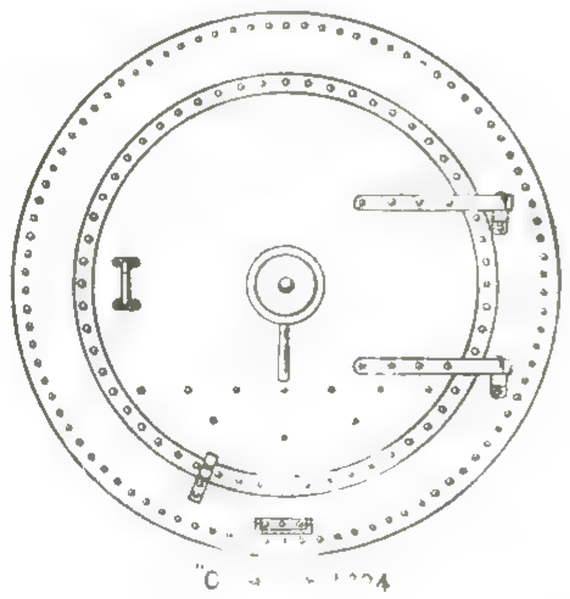

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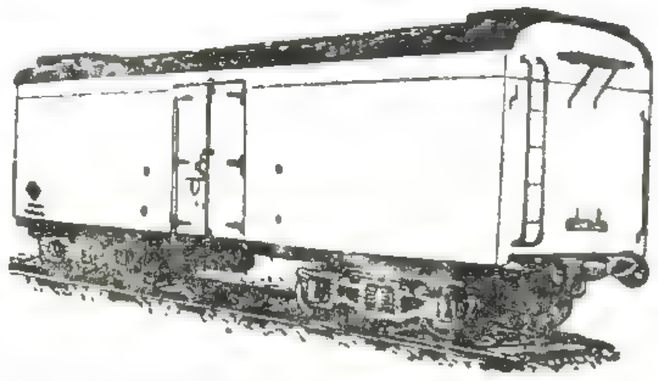

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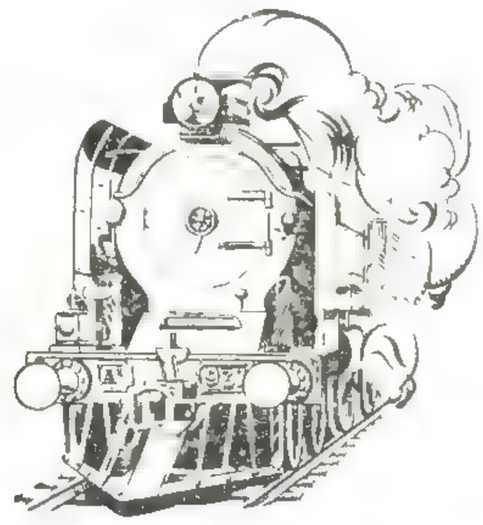

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RAILWAYS IN AUSTRALIA

MONTHLY 1/3

The Magazine about Australian Trains

Published monthly by TRACTION PUBLICATIONS, 29 Seymour Grove, Brighton Beach, S.5
Annual subscription 15/- posted (U.S.A. & Canada 2 dollars)

Vol. V, No. 3 — 15th MARCH, 1952

Red Cross Appeal Month

FLOODS AT KEMPSEY

The railway bridge at Kempsey, N.S.W., during the record flooding of the Macleay River in August, 1949. Rail and road traffic were blocked to an unprecedented extent when the river rose, following the melting of a phenomenal fall of snow in the New England district, accelerated by a heavy downpour of rain.

As mentioned by Mr. Einsiedel, trains over this section were subject to heavy speed restrictions for some time after services were restored. (Photo. by Mr. J. Cobcroft.)

HOLIDAY BY RAIL

By C. EINSIEDEL

(Continued)

At the conclusion of a further week of travel on the railways of New South Wales, Mr. Einsiedel slips over the border to sample the joys of narrow-gauge travel.

I had a sleeping berth booked that same night on the 1.35 p.m. Brisbane Express via Wallangarra from Sydney and, as it was not due at Werris Creek till 10.35 p.m., I took the Up North-West Mail to Quirindi at 9.24 p.m., waited there for the Express, which was running on time, and I was in bed and asleep before getting back to "The Creek." The following week I made the trip in daylight from Sydney to Armidale, so that the only country I missed was that between there and Glen Innes where on this trip the train left on time at 5.45 a.m. The Main North Line provides some of the hardest running in the State, and, from Armidale, the re-crossing to the west side of the Great Dividing Range involves an initial climb of over 1000 feet in 17 miles, with a maximum grade of 1 in 48. Curvature, however, is not unduly troublesome, and conditions ease a great deal in the next 20 miles to the top of the range, 4517 feet above sea level, about a mile before reaching Ben Lomond. This is the highest rail point in the State. Thereafter, grades are mostly falling, with a ruling rising grade of 1 in 40, but the 715 feet rise in 6½ miles from Buffalo River to Bungulla, five miles before Tenterfield, provided some hard work for the two 32's at the head of the train.

The Express, which would appear to hold its title only with some tolerance, became a "stop-all-stations" job after Armidale, and ended its run by topping the ridge which is the border, just before Wallangarra, only two minutes late, at 8.29 a.m. This was the end of another week of travel, as I stayed with friends there for a couple of days, and I must say that the spell was welcome. Mileage for the week was 1387, total 3346.

Continuing on to Brisbane on the Monday morning (with a purchased ticket — N.S.W.R. All-Lines tickets being of no interest to the Queensland Railways!), the "Sydney Mail," headed by Pacific No. 845, had a load of 152 tons, the seven vehicles including a guard's and a baggage van. With three exceptions, the train stopped as required at all stations where not timed, as far as Gatton, 60 miles from Brisbane. Owing to the late arrival of the N.S.W.R. train that morning, the Wallangarra departure was 23 minutes late at 9.18 a.m., and nothing was regained over mountainous and hilly country as far as Warwick (64 miles), similar to that south of the border. That this was not thought to be very productive land in earlier times is suggested by the name "Plum's Mistake" along the track, and another—"Wilson's Downfall"—some distance to the north-east.

Highest point on the run is at a station appropriately named "The Summit," 3035 feet above sea level. At Warwick, a new steel and concrete bridge is being built over the Condamine River on a more direct alignment, and from there until nearing Toowoomba, easier running conditions prevail. The variety of crops across the Downs country was of interest, as was a bottle tree in a street plantation at Clifton (89 miles). The Down Mail, running on time, was crossed at Nobby (105 miles) instead of at Greenmount, five miles further on.

At Toowoomba (122 miles) engines were changed and 804 came on, with two cars, making the load 201

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Vol. V, Nos. 1-2 January-February, 1952

Requiescat in Pace

George VI

OUR BELOVED SOVEREIGN

Dr. McGilchrist
88 Rathdown
Carlton

THE "OVERLAND" — A MEMORY

BEFORE THE DAYS OF DIESELS AND STREAMLINED CARS — the "Overland" Express (Melbourne-Adelaide), hauled by S.A.R. No. 505, a "paleface" 4-8-4, runs through the Mount Lofty ranges near Adelaide, S.A. (S.A.R. Official Photo.)

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HOLIDAY BY RAIL

BY C. EINSIEDEL
(Continued)

In this instalment, the author takes us many miles further on his marathon vacation. Bourke, in the Far West of New South Wales, is his first goal, then across relatively little-known country to the North. All principal stations mentioned will be found on the N.S.W.R. map in our January, 1951, issue.

Nine miles further on, there is some hard work for the engine on a bank of nearly three miles at 1 in 40 through Tumulla. From there on the country is undulating, though generally falling, all the way to Dubbo. Although the double track from Sydney ends at Kelso, just outside Bathurst, there are a couple of sections between the latter station and Blayney (180 miles). On one, just after passing Gresham, the train passed the Up "Central West Express" which, it being Tuesday, had come from Forbes.

The engine took the front car (MCX) off at Orange (200 miles) during the stop of 17½ minutes and, while it was taking water, I noticed a couple of workmen board the tender to shovel coal forward from the rear. Perhaps I am not as observant as I might be, but I noticed for the first time a water column beside the track lagged with rope to prevent freezing in frosty weather. I saw another at Woolbrook, up

Bright sunshine and black shadows are typical of Bourke, N.S.W. The Mixed by which Mr. Einsiedel travelled has since been replaced by the attractive 2-car diesel train standing at the platform. No. 603 is the power car, with trailer 703. Bourke yard is not visible in the picture, the second track being purely a run-round road. (R. B. McMillan photo.)

THIS MONTH'S COVER

The five leading cars in the train shown on this month's cover are heavy wooden BR-SAR Joint Stock sleepers. Following them is a modern steel SAR tourist car (1st/2nd), after which come an AE (1st) and BE (2nd), also Joint Stock wooden cars, of VR design. Then follow the Mail Van and a CE van (Guard/luggage).

Most of these cars have now been eliminated from regular make-up of the "Overland" which comprises streamlined, air-conditioned Roomette and Twinette sleepers, and day coaches of similar design. The older cars may still be seen on the second division run frequently during the summer and at other holiday times.

towards Armidale, but probably missed many more.

The train would have been only 8 minutes late at Dubbo (287 miles) but for being held outside awaiting the departure of the Up Through Mail from Bourke. This was belated, and caused a further 20 minutes delay. Another new sight while waiting in the yard was a steam shovel picking up coal from ground level and filling engine tenders. I got the impression that Dubbo had grown far beyond the facilities.

I stayed at this large town overnight and continued on to Bourke next day on the 9.25 p.m. Through Mail from Sydney, timed to leave Dubbo at 9.02 a.m. Owing to a late arrival, the departure was 22 minutes late, and on this track time recovery must be a rare occurrence. Engine 3302 had a load of 249 tons, including a KKG horse box for Narromine where races were being held. The country flattens out just before Narromine (309 miles), which is situated in the middle of a 360 chains curve almost two miles in length. From there, the main features of the railway are long straight runs over almost flat land. There are only five curves on the 203 miles between Narromine and Bourke, and guessing at the reason for them in such country interested me. Probably the towns—Trangie, Nevertire, Nyngan, and Bourke—existed before the railway was built and, as they do not happen to be in a straight line, there is a curve within a comparatively short distance of each. That just outside Bourke is merely to line up the station yard parallel to the town's southernmost street which runs east-west. That disposes of four of the curves, but the reason for the 480 chains radius, curve about 33 chains in length, at the end of 116 miles of straight, and which ends seven miles from Bourke, is not so obvious; there does not appear to be any physical feature, such as a swamp, to have caused this. The country is fairly heavily timbered almost all the way from the commencement of the long straight, three miles on the Down side of Nyngan, and opens out to plain land only four miles before its ending. Possibly, having made an error in the compass bearing, the surveyor found it easier, on emerging from the timber, to put in a curve rather than go back over 100 miles to make a new alignment. The 116 miles is, of course, the longest in the State, and the last 5½ miles make up part of a level stretch of 13 miles across the plain to the end of the line.

After unloading the horses and van goods, and attaching the horse box, the train left Narromine 8 minutes late, but this was reduced by 8 minutes on departure from Trangie (329½ miles) after the engine had taken water. It would have been no later at Nyngan (386¼ miles) were it not for a block of 21 minutes waiting outside for the Cobar branch train to finish its work and get into No. 2 road. The Dubbo engine, the leading car, and the leading van came off here to go on to Cobar. 3029 took over, getting away at 1.43 p.m., 47 minutes behind schedule. After waiting at Wilga, and a longer stop than usual at Coolabah,

the Byrock (464½ miles) arrival was delayed from 4.12 p.m. to 5.01 p.m. waiting for the Down Goods to finish its work in the yard. After a while, some time was saved by the Goods drawing ahead in the platform road to allow the Passenger to pull in, so that the engine could water at the Up end of the platform. At this point, 3029 came off to do the Brewarrinna branch [illegible], and the Goods engine, 3361, which had come from Nyngan, took over the two cars and the MHO and PHG vans, with some freight stock, as the train now became a Mixed. Departure was 1¾ hours late, but after a shunt at Boorindal, ten minutes were picked up, arriving at Bourke (512½ miles) at 6.57 p.m.

I never got "back o' Bourke", the bridge over the Darling, four miles away, being rather too far to make before the departure of the Mixed at 9.25 next morning.

There were bales of wool stacked in sheds and elsewhere all round the town, and quite a few truckloads on the train. Lack of transport during the coal strike (which occurred in the shearing season) had held it up. Someone should make those heaps of rusty tins near the station one of the town's tourist attractions; There must be acres of them—Bourke must have been there a long time!

Several MRC's (bogie refrigerator cars) were waiting to be loaded at the meatworks around which plenty of raw material was yarded. Much of this meat goes to Melbourne, and takes the cross-country route via Narromine, Peak Hill, Parkes, and Forbes, Stockinbingal, and Cootamundra, thence to Albury for transhipment. All through the timbered country on the straight run to Nyngan, I noticed alongside the telegraph posts, flat on the ground, shapes made, apparently, from whitewashed hessian about two feet wide and fifteen feet long. Enquiry revealed that they were identification marks used in an aerial survey; without them it would have been almost impossible to place air maps in the right sequence, as the density of timber is the same for long stretches, and there are no roads except that alongside the railway; the latter is fenced throughout, on both sides.

Running early, a signal stop of 13 minutes outside Byrock while the Brewarrinna branch train got clear of the platform road, enabled an on-time arrival to be made. 3361, freight vehicles and the van came off to continue later as the Up Goods, and the branch engine, 3029, running tender-first, came on to the train with the two Brewarrinna cars; the train was now the Through Mail. There was another delay outside Nyngan, only ten minutes this time, and after the lunch stop, and picking up the Cobar branch passengers and some goods, the departure, this time with a Dubbo engine, was only seven minutes late, gradually improving to four minutes early at Dubbo. Speeds improve considerably between Nyngan and Narromine, after which rising country is encountered. The 2 hrs. 22 min. allowed for the 75 miles was bettered by only 2½ minutes, and this involved some smart work. The nine stops aggregated 19 minutes, which brings the actual running time to 123 minutes. The fastest start-to-stop run was 15 minutes for the 10¾ miles from Trangie to Mungeribar.

Cross-Country Ramble.

I stayed overnight in Dubbo once more and next day continued across to Merrygoen and Binnaway on one of the new 2-car diesel sets, thence on to Werris Creek on the Northern line. An attractive feature of the diesel cars is that, on the motor car, the engine is under the floor, so that all floor space is available for passengers or van loading.

The main physical feature of the run to Binnaway is the long climb, rising 410 feet in eight miles at an average grade of a little more than 1 in 100, to cross a range 14 miles after passing Elong Elong. There is a similar grade on the other side and then a second rise for three miles at 1 in 100 into Binnaway. On this run, the further the train went, the more it got ahead of schedule (apparently I had the wrong timetable!). Eight minutes early leaving Elong Elong increased to 13 at Merrygoen, 18 at Neilrex, 19 at Piambra, with the arrival at Binnaway 24 ahead, at 12.38 p.m.

Sleepers are an important product along parts of this line and further north. I was told that Baradine produces the best in the State. Binnaway was quite a busy place in a small way. The Mixed from Mudgee, with the through van from the 10.47 p.m. Mail from Sydney the previous night, had arrived ahead of the diesel. The latter continued on through Coonabarabran and Baradine to Gwabegar, 90 miles distant, at 1.35 p.m.

IMPORTANT NOTICE
To All Readers

UP TO DATE AT LAST!

You will have noticed that this issue bears the date, "January/February, 1952."

There appeared no likelihood of being able to publish more than one issue each month. The only other way of catching up the months lost through last year's publication problems was to date successive issues "September/October," etc. By this means, we should have been able to publish the July issue in July.

It was apparent that confusion was caused among retailers by the arrival of seemingly out-of-date issues. We have therefore adopted the drastic expedient of omitting the months of September to December, 1951.

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As the Werris Creek train was not due out until 1.50 p.m., I had a look around. There are always pitfalls in getting wrong impressions from seeing something happen just once, but I thought a lot of time could have been saved in transferring mail, parcels, luggage, etc., from the van off the Mixed to the diesel. It took 25 minutes to load this from the platform on which it had been unloaded from the van. It seemed that the van could have been left in No. 2 road and the loading done directly using a small, portable gangplank.

The Werris Creek train, which had come the 92 miles from there during the morning, was a real relic of the past. The LFX, EHO, and CX were drawn by 1245, a 4-4-0 of 1882 vintage with outside cylinders, and with a six-wheeled tender which had once belonged to a 32 class 4-6-0. While it would not be quite truthful to say that the firement went on a route march every time he shovelled coal, he certainly had a long way to shift it! With the load in hand, four miles at 1 in 100 to cross a ridge 28 miles out was easy compared with the effort to maintain a schedule drawn up for a rail motor. Twenty minutes behind at Yannergee, about halfway, where water was taken, the gap had increased to 28 minutes 25 miles further on, at Caroona, and to 32 minutes on arrival at Werris Creek at 5.51 p.m. The train drew in behind the 8.15 a.m. from Sydney to Tamworth, which was waiting for connecting passengers.

On this run, the approach to Werris Creek was interesting as the crossover to the Northwest line at Gap, a little over three miles out, where the two lines run parallel, was not being used. Passing through the narrow gap, the line headed south, then east, through open paddocks until the main line was joined about a mile south of the station.

(To be continued.)

LEYLAND RAILMOTOR, one of three double-enders in service on the broad (5 ft. 3 in.) gauge Victorian Railways. The design was copied from the New South Wales Railways, on whose standard gauge tracks a large fleet of similar vehicles operate. The Victorian cars are numbered to RM. Leon Marshall-Wood was the photographer.

N.S.W.R. 4-CAR DIESEL TRAIN

Attractive New Train in Service.

The first of the new 4-car diesel, air-conditioned trains has been completed and entered regular service on Monday, 26th November, 1951. Prior to this date the new train was chartered by the Northern Suburbs Model Railway Association for a tour from Sydney to Moss Vale, across to Wollongong, and back to Sydney via the South Coast line.

New Express Service.

Regular operation of the new train is on the "North Coast Daylight Express", a new service between Sydney and Grafton which runs thrice weekly in each direction. Running time for the 434-miles journey is 2 hrs. 25 min. faster than that for the Brisbane Limited Express, giving an average speed, including stops, of just under 39 m.p.h.

Train Consist.

The car set, which is coded DEB, comprises two motors and two trailers, made up as follows: Car 1—HPF, No. 951, Power car, with seating for 28 2nd class passengers, and baggage compartment (8 tons), tare weight 41 tons; Car 2—TFR, No. 851, trailer car with buffet, seats 36 2nd class passengers, tare 26 tons; Car 3—TB, No. 801, trailer, seating 54 1st class passengers, tare 27 tons; Car 4—PF, No. 901, power car, 43 2nd class seats, tare 37 tons. Total accommodation is for 54 1st class and 107 2nd class passengers, with a total weight, unloaded, of 131 tons. Length of power cars is 61 ft. 3 in., and of trailers 58 ft. 6 in., overall. Maximum operating speed is 70 m.p.h.

This set is the first of seven, and it will be possible to operate them as 4, 8, or 12-car trains. All are under construction in N.S.W.R. shops.

Attractive Appearance.

The new cars are similar in appearance to those used in the 2-car branch-line sets, but have larger "picture" windows. Seating is of the modern type standard on N.S.W.R. daylight expresses. Colour scheme externally is standard N.S.W.R. tuscan red and russet, relieved with chrome striping. Internally, ceilings are painted light buff, cornice down to window sills is golden cream, and from the sills downward, rubber fabrix is used to cover the sides.

Apart from the teething troubles to be expected with new equipment, the new set has had rather bad luck during its first months of operation, and steam trains have been used with, in at least one instance, some really remarkable running. It is anticipated that the second of these sets will be ready for use in April.

Motive Power.

Motive power for the new train is provided by two horizontal, underfloor, 220 h.p. Hercules diesels under each power car. Fitted to the underframe, these engines also supply power for auxiliaries, including braking and air-conditioning. Electro-pneumatic control is used.

Other features of interest include the widespread use of kapok insulating material in car sides, ends and roofs, together with double windows, each equipped with a dessicator using silica gel. Those who have ridden in the new train speak very highly of its comfort and riding qualities.

35 NEW PACIFICS FOR Q.R.
Modernized B18¼'s

The Queensland Railways have taken delivery of an order for 35 Pacific-type locomotives from the builders, Vulcan Foundry Ltd., Newton-le-Willows, England.

As the need for additional mixed-traffic motive power became apparent after the war, an order was placed in 1948 for 20 engines of a modernized B18¼ design. Principal improvements over the pre-war design include increased piston-valve travel, enlarged tender capacity, and roller bearings on all axles. Before construction was commenced, it was decided to increase the order to 35, because of the inability of local builders to meet demands.

To ensure a wide radius of action for the new engines, they are designed to have a 12-ton axle-load, and can negotiate curves of 330 ft. radius. Two inclined cylinders, 18¼ in. diameter and 24 in. stroke, drive the 63 in. diameter coupled wheels. With a boiler pressure of 170 lbs. per sq. in., the tractive effort (at 80% boiler pressure) is 21,306 lbs.

The boiler is all-steel, having a round-top firebox, 119 tubes of 2 in. diameter, and 21 flue tubes of 5 in. diameter are fitted between the tubeplates, which are 15 ft. 9⅜ in. apart. These tubes contribute 984 and 184 sq. ft., respectively, of heating surface. The inner firebox is all-welded, and is supported on all surfaces, except the top, by rigid steel stays, riveted on the inside, and welded. With the exception of two rows of flexible stays, the firebox crown is stayed with rigid stays having taper threads. With 106 sq. ft. of firebox area, the boiler has a total evaporative surface of 1,524 sq. ft. An M.L.S. superheater header, with 21 elements and anti-vacuum valve, is fitted, having a heating surface of 334 sq. ft.

"Hulson" rocking-grate firebars are used, and are capable of being operated from the cab—the grate area being 25 sq. ft. An all-welded, double-hopper ashpan has two sliding doors operated by an air cylinder. Two Sellers type "N" 9.5 mm. injectors are attached to the boiler backplate and feed through Q.G.R. design check boxes.

An "Everlasting" 1½ in. diameter blow-off cock is mounted on the throat plate. Boiler backplate fittings include Dewrance water gauges and a Detroit three-feed lubricator. The boiler has Ross safety valves, and the regulator, which is housed in the dome, is of the Vulcan balanced type.

Steam distribution has been improved by increasing the piston valve travel from 4⅛ in. to 5½ in. In addition, the valves are of a light type fitted with two narrow rings in place of the broad rings in the heavier valves. The steam passages in the cylinder casting have been redesigned to give improved flow.

All axles of both engine and tender roll on S.K.F. roller bearings, as do the eccentric cranks. Fixed phosphor-bronze bearings are used for the coupling rods and the connecting rod little-end, the big-end having a floating bush. The wheel-centres are to the patent design of the Steel Company of Australia Pty. Ltd. and were manufactured in England under licence by K. and L. Steelfounders and Engineers Ltd. These wheels have the U-section spoke introduced in Australia by the R class locomotives of the Victorian Railways and are known as SCOA—P type.

The coupled wheelbase is 10 feet and the engine wheelbase 26 ft. 9 in. Both leading and trailing wheels are 28 in., with the leading bogie wheelbase 5 ft. 8 in. The leading bogie is spring-controlled, with side bearings.

Maximum height is 12 ft. 6 in., over the funnel, and the boiler is pitched at 7 ft. 3 in.

The tender is carried on two 4-wheel trucks of 5 ft. 0 in. wheelbase, spaced at 11 ft. 10 in. centres. 3,500 gallons of water, and 10.35 tons of coal are carried, making the total weight of the tender in working order 43.2 tons. Tender wheels are 33 in. diameter.

The engine weights are, in working order: leading bogie 11.36 tons, leading drivers 11.96 tons, centre drivers 11.94 tons, trailing drivers 11.96 tons, and trailing truck 10.73 tons. The total weight of the engine is 57.95 tons and the adhesive weight 35.86 tons, while engine and tender scale 101.15 tons.

Road numbers 1011-1045, inclusive, have been given to these engines and, in common with all Q.G.R. motive power, cast number plates are attached to the first course of the boiler barrel. The large-diameter smoke-box door is held by eight circumferential clamps. In accordance with current practice, the headlight is mounted axially with the boiler centre-line.

Electrical equipment for the first twenty engines is of Pyle National manufacture, while Stone's supplied the last fifteen sets.

The design, which has been classified BB18¼, was prepared to the instructions of Mr. Vincent Hall, Chief Mechanical Engineer, Queensland Government Railways, the inspection being handled by Mr. J. A. Baxter, Resident Engineer.

NEW STANDARD BOILERS
N.S.W. Places Orders

The New South Wales Railways have placed orders for 85 of the new standard 35/36 class boilers. These are suitable for both classes of locomotive, and feature a Belpaire firebox. 45 are to be supplied by the Vulcan Foundry of Newton-le-Willows, and 40 will come from the North British Locomotive Co. of Glasgow.

N.S.W.R. 40 CLASS DUAL-SERVICE DIESEL ELECTRIC LOCOMOTIVES

Particulars of these new locomotives are as follows (a picture of No. 4001 appeared in our August, 1951, issue):—
Builder: Montreal Locomotive Works, Canada.
Main Engine: 1600 h.p. 12-cyl. V-type, Model 244-C.
Cylinders: 9 in. x 10¼ in.
Main Generator: General Electric GT-581, 250-1000 r.p.m., continuous current rating 1085 amperes.
Gear Ratio: 65 : 18.
Wheel Arrangement: A1A-A1A.
Tractive Effort: Maximum 50,000 lbs.
Continuous 46,000 lbs. at 11.0 m.p.h.
Truck Centres: 30 ft. 0 in.
Maximum Speed: 75 m.p.h.
Wheel Diameter: 40 in.
Weight: 110 tons.
Axle Load: 18.3 tons.
Road Numbers: 4001-4020.

Non-Standard Arrangements Required by N.S.W.R.

Removal of train steam-heating boiler.
Substitution of a Nathan 5-tone chime for the single-note horn.
Provision of buffers and transition automatic coupler.
Modified cab with inward sloping sides above the waist-rail to allow for clearance.
Front platform handrail not required.
Train number boxes not required; standard N.S.W.R. marker lights substituted in lieu.
Steel pilot (cowcatcher) at the front end only, as it is intended that the locomotive shall run coupled in pairs, with the radiator at the inner ends.

Other Details

Brakes fitted are Westinghouse, Schedule GSL. Control stages are as follows: Series Parallel, Full Field; Series Parallel, Shunt Field; Parallel Full Field, Parallel Shunt Field (all with manual selection fore and aft). Length over buffer beams is 52 ft. 0 in.

Load Limits

Permissible loads at present are: Enfield-Broadmeadow, 800 tons unassisted; Broadmeadow-Enfield, 1200 tons, assisted Hawkesbury River to Cowan by 50 class 2-8-0 in rear.

MAINLINE DIESEL-ELECTRIC LOCOMOTIVES FOR COMMONWEALTH RAILWAYS

Principal Data (From Clyde Specification MLI)

Type: 1,500 h.p. Mainline, 6-axle, 4-motor.
Overall Length: 61 ft. over couplers.
Overall Width: 9 ft. 9 ins.
Height: 14 ft.
Power Plant: Model 5678 engine, 16-cylinders V-type; 2-stroke with G.M. unit injectors. R.P.M. 275/800; weight per horsepower—20 lbs.
Compression Ratio: 16/1.
Firing Pressure: 1,100 lbs. per sq. in.
Rated Engine Output: 1,625 h.p. (To auxiliaries—125 h.p.; available for traction—1,500 h.p.).
Fuel Consumption under full load: 1-2 gallons per locomotive mile.
Weight on Drivers: 74 tons.
Gear Ratio: 58/19.
Permissible Speed: Maximum, 89 m.p.h.; minimum 15 m.p.h.
Total Weight: 108 tons.
Tractive Effort at starting (based on 25% adhesion): 40,000 lbs. Continuous tractive at 15 m.p.h.
Fuel Capacity: 1,500 gallons.

QUEENSLAND LOCOMOTIVE NOTES

Good Mileages on Q.G.R.

It is interesting to note that the diminutive locomotive of class B9¼ (3 ft. gauge) are covering over 1,000 miles monthly in the canefields. During September, No. 11 covered 1,385 miles.

The same month saw No. 1033, class BB18¼, a Rockhampton loco., turn in 6,909 miles. These new 3 ft. 6 in. gauge locos. are turning in some really fine performances. Of the 35 in service, twenty turned in a monthly mileage between 4,000 and 7,000 each.

The older B18¼'s are still well with them, though. The highest mileage during September for one of the Beyer Garratt 4-8-2 + 2-8-4's was by No. 1097, another Rockhampton loco, which turned in 5,497 miles.

Locomotives in Service

Locomotives in service on the Queensland Railways as at 30/9/51 were as follows:—
(B — Southern Division, Brisbane District; C — Northern Division, Cairns District; I — Innisfail Railway; K — Northern Division; M — Southern Division, Maryborough District; R — Central Division; T — Southern Division, Toowoomba District.)
B13½ (0-6-0) 6B; AC16 (2-8-2) 10B, 3T 7R; Beyer Garratt (4-8-2 + 2-8-4) 3B, 10M, 12R; D16 (4-6-4T) 2B; D17 (4-6-4T) 30B; DD17 (4-6-4T) 9B; PR (4-6-0) 69B, 26M, 31T, 27R, 30K, 17C; CB15 (4-6-0) 10B, 7T, 1R, 8K, 15C; B17 (4-6-0) 12B, 6T, B15C 1M; B18¼ (4-6-2) 35B, 10M, 16T, 19R, 3K; BB18¼ 13B, 4M, 7T, 8R, 3K; C17 (4-8-0) 41B, 11M, 20T, 50R, 84K, 1C; C16 (4-8-0) 17B, 7M, 22T, 62R, 30K, 1C; C19 (4-8-0) 10B, 4M, 10T, 2R; CC19 (4-8-0) 1B, 2T; D13½ (Rail loco.) (0-6-0T) 5R; D8½ (0-6-0T) 41; B9½ (0-6-0) 3
Total, all classes:

FORMER N.S.W.R. 0-6-0 now operated by the Corrimal Coal Co., of Corrimal, N.S.W. (See our issue of December, 1950, for details of this company's line.) Photographed by Ken McCarthy.

SILVERTON TRAMWAY
New Beyer-Peacock Locomotives

Numbers, names, etc., of the new Silverton Tramway 4-8-2's are as follows:—

22 "Justin Handcock" (given incorrectly in our August, 1951, issue as "Austin Hawick"), Builders' No. 7418.

23 "H.F. (Gerry) Walsh" (7419).

24 "Malcolm Moore" (7553).

25 "Thos. B. Birkhead" (7554).

The four engines, two under steam, ran coupled together over S.A.R. metals, to the Silverton Tramway, after being unloaded at Port Pirie.

NORTH COAST DAYLIGHT EXPRESS

Schedules of this new N.S.W.R. train (see description elsewhere this issue), are as follows:—

DOWN — Sydney depart 7.52 a.m., Mons., Weds., Fris., Grafton arrive 8.08 p.m.

UP — Grafton depart 7.04 a.m., Tues., Thurs., Sats., Sydney arrive 7.35 p.m. (7.30 p.m., Sats.).

Booking may be made fourteen days in advance, and seat reservation is compulsory.

NEW BRANCH LINE AND SIDINGS
N.S.W. Calls Tenders

Tenders have been called by the New South Wales Railways for track laying on a branch railway, 5 miles 39 chains in length, for the Joint Coal Board at Ben Bullen, N.S.W., and for track laying on 2 miles 4 chains of sidings, also for the Joint Coal Board, at Lithgow, N.S.W.

N.S.W.R. NOTES IN BRIEF

On the Illawarra line, an intermediate staff instrument has been provided for the single track, Dapto-Albion Park section, to allow for the Tallawarra Power Station Construction Siding at Yallah.

Re-routing of part of the Illawarra line to avoid unstable country near Coalcliff has been recommended. A 1-mile tunnel would be required.

Tenders have been called for the supply and delivery of 200 locomotive tenders with removable tank. Capacity—water 5,000 gallons, coal 12 tons.

PHOTOGRAPHERS!

Thanks to those of you who have sent so many interesting photographs. Financial considerations place severe limits on what we can use, but all suitable prints will find a place in these pages eventually.

Particularly wanted are good, clear shots of new locomotives.

EUROPEAN RAILWAYS
Subscription Reduced.

As indicated in advertisements, the annual subscription to "European Railways" in this country has been reduced to 13/3d. yearly. Anyone interested in the railways of Great Britain, Eire, and the Continent, will find the clear, detailed illustrations and the attractive layout of this magazine well worth having. Good quality paper is used.

Now Published Bi-monthly.

A monthly until October last, "European Railways" will appear every two months from that date, for technical reasons, the first issue under the new arrangements being that for November/December. Issues will, of course, be double-size, which means quite a sizeable paper, as the number of pages has increased steadily during the past year.

Sample Copies Obtainable.

We have not yet received samples of the two-monthly issues, but anyone interested may obtain a sample of the previous monthly style for 1/6d., post free, by writing to Traction Publications.

ELECTRIC RAILWAY NEWS

Readers will have noticed that we rarely comment on electric railway matters in this journal. This is not because nothing happens in that line—far from it! What does happen from time to time is described in ELECTRIC TRACTION, published monthly.

This journal is available by subscription only, at a cost of 13/6d. yearly, post free. Sample copies will be sent, post free, on receipt of stamps, value 1/3d. Write to Traction Publications.

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MEN WANTED!

Magazines addressed to the following suscribers have been returned unclaimed by the postal authorities. Any reader knowing those concerned is requested to ask them to get in touch with the editor.

R. L. PARKER. last known address LAVERTON, Vic.

R. G. ANDREWS. of Brisbane, Q.

H. HAYES, Maryborough, Q.

H. RILEY, Mt. Gambier (postmark on letter—no address given).

CAPACITY is the keynote of modern N.S.W.R. freight rolling stock. A far cry from the diminutive 12 and 15-ton four-wheelers in general use is No. 28626, one of the new BCH 40-ton hopper cars for coal traffic. 2,750 of these cars are on order; "Ride-control" bogies are fitted, for high-speed operation. (Official N.S.W.R. photograph.)

BOOK REVIEW

"GARDEN RAILWAYS"
By R. E. Tustin
(Percival Marshall & Co. Ltd.)

Model railway books published in recent years have rarely, if ever, dealt with outdoor lines; if they have, it has usually been in passing. To remedy this deficiency, Mr. Tustin has written this interesting and complete work on the subject. We say "complete" with justification, for, starting with "sites, soils, snags, and scales," the author deals with every conceivable problem encountered in the construction of outdoor railways. This is no theoretical work, as Mr. Tustin built and operates a fine 0 gauge outdoor layout himself. Detailed explanation, coupled with clear diagrams and sketches, enable every stage to be followed, and clear photographic illustrations provide both pleasure and encouragement. An interesting section illustrates full-size layouts of terminal stations which can be reproduced more or less to scale in O gauge.

(Our copy, Meadmore Models—17/6. 112 pp., 9¼ in. x 6 in., hard cover.)

"RAILWAYS FOR ALL"
By H. C. Webster
(Ward, Lock & Co. Ltd.)

On a previous occasion, we remarked that a book which set out to tell all about a particular subject often ends by providing little useful information about any-

NEWS IN BRIEF

N.S.W.R. Electric Locomotive

The experimental Co-Co electric locomotive being constructed by the New South Wales Railways will have a one-hour rating of 2700 h.p. Six 450 h.p. motors, each weighing 4½ tons, are provided, Australian General Electric Pty. Ltd. being the manufacturer. 40 larger locomotives are on order from overseas.

New V.R.-S.A.R. Joint Stock

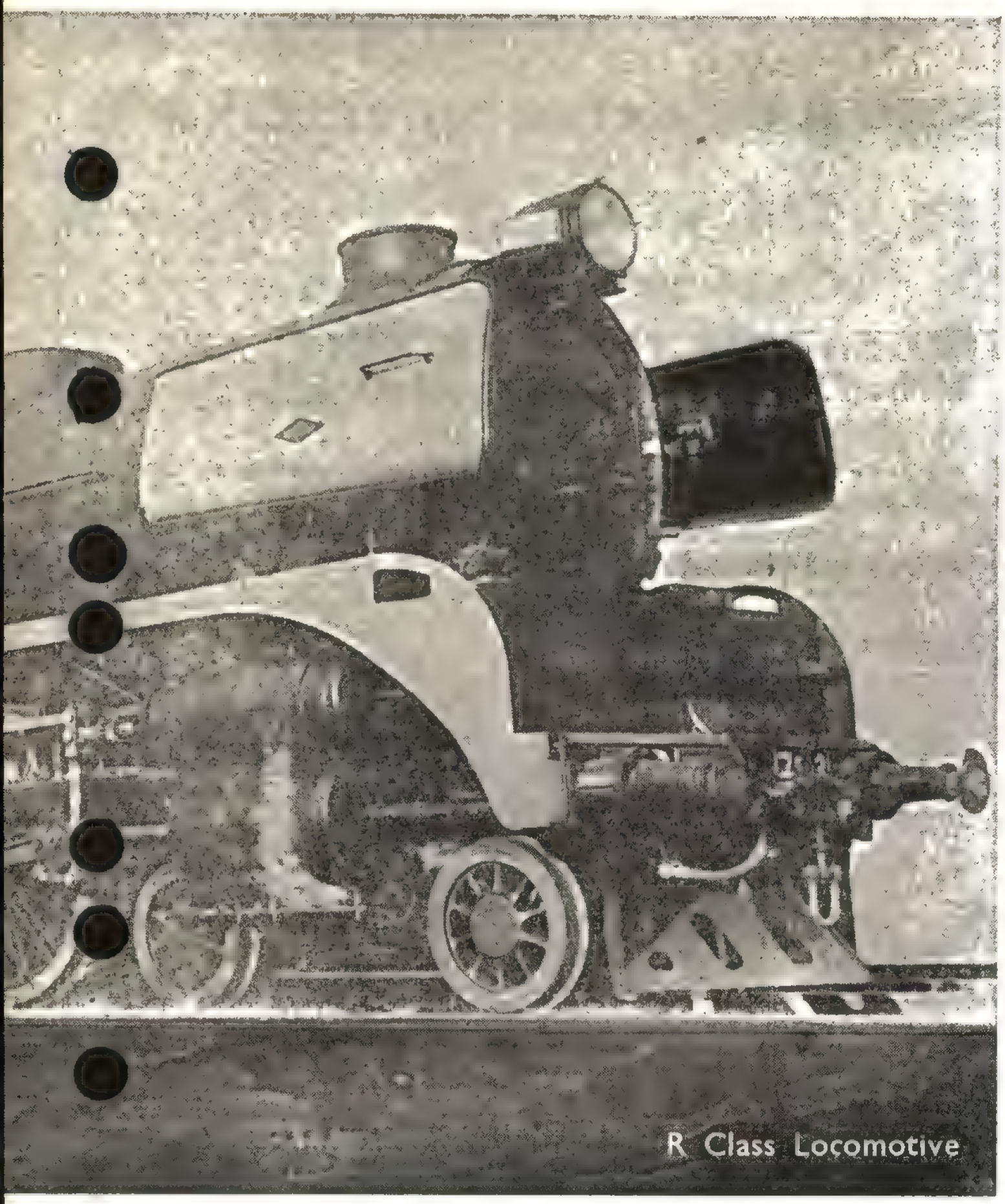
Air-conditioned first class sitting cars for the "Overland Express" between Adelaide and Melbourne are now in service. Built at the Islington, S.A., workshops of the South Australian Railways, the new cars are of the centre-aisle saloon type. Rotating, aircraft-type seats, hot and cold water, iced drinking water, and picture windows, are among features of the new cars.

NEW R CLASS 4-6-4's
Victorian Railways

This official V.R. publicity shot gives an idea of the impressive appearance of these new 4-6-4 passenger engines. Particulars of the R class given herewith are additional to the description of these machines which appeared in our August issue. Colour: black, red lining.

Tractive effort of the new locomotives is 32,100 lb., at 210 lb. boiler pressure: cylinders are 21½ in. x 28 in., and driving wheels are of 6 ft. 1 in. diameter; leading wheels have a diameter of 33 in., trailing wheels 3[illegible]. Total wheelbase of engine and tender is 67 ft. [illegible] of engine alone 36 ft. 3 in., and the rigid wheelbase is 12 ft. 10 in. Overall length is 77 ft. 3¾ in., and total weight in steam 187 tons 8 cwt. Maximum axle load is 19½ tons.

(Editor's note: We are anxious to print an "action" shot of the R class; photographs to hand so far have been unsuitable for reproduction, and a good, clear print, on glossy paper, would be appreciated.)



R Class Locomotive

V.R. LOCOMOTIVE NOTES

More Oil Burners

N class 2-8-2's, Nos. 460, 499, and 463 (all built by North British), have been converted to oil burning. It was intended originally to convert all 40 of the North British N's, but cuts in Government finance have delayed this work indefinitely.

V.R. Locomotives Scrapped

The following locomotives have been scrapped on the dates shown (loco. class shown in brackets): 282 (D4) on 29/10, 286 (D4) 14/11, 579 (D1) 713 (D2), 7, 953, 958, 977, all A2) all 4/1/52. The three last ntioned were involved in the Serviceton collision.

V.R. PETROL ELECTRIC CARS

Successful in New Guise

Following the successful conversion of No. 60 RM from petrol-electric (220 h.p. Winton) to diesel-electric (265 h.p. General Motors), a second car has been fitted similarly. Good reports are to hand of their operations.

thing. Railways in their many and varied aspects form rather too large a subject to be compressed within the limits of 250 pages and 60 illustrations. Mr. Webster has made a valiant effort, however, and the book is well worth having for the chapters on British railway operation. Perhaps we are unduly sensitive, but we could not help noticing that references to Australian railways contain several inaccuracies, while the omissions are even more noticeable. The book is not one which we would recommend to the advanced enthusiast, but it would make an admirable addition to the shelves of a newcomer to the hobby.

(254 pp., 8 in. x 5½ in., hard cover. Our copy, McGill's Newsagency, 17/9.)

"RAILWAY TRANSPORTATION"
Shennen Publishing Co. (Monthly)

It may surprise some that we give publicity to a competitor (or so this new journal has been described). In actual fact, "Railway Transportation" is a trade journal of the "Railway Age" type —the first such periodical to be published in this country, and by far the finest railway journal ever to appear here. It is published by our good friend, Frank Shennen, who is well known to many readers, and whose "Trucks and Bus Transportation" has long been the national journal in that field. While not intended for enthusiasts, "Railway Transportation" will undoubtedly be of interest to many.

(2/6 per copy, or by annual subscription.)

NEW TASMANIAN LOCOMOTIVES

Mixed Traffic 4-8-2's.

New H class 4-8-2 locomotives Nos. H1 to H8, builder Vulcan Foundry Ltd., Newton-le-Willows, England, entered service on the Tasmanian Railways on the following dates (in order of road numbers): 7/11; 23/11; 20/11; 9/11; 14/11; 28/11 4/12; 24/11/51. Builder's numbers are 5949 to 5956, inclusive.

These engines are the first to operate in Australia with roller bearings in the valve gear, connecting rods, and side rods.

Mainline Diesel-electrics.

At the time of writing, all except one of the eighteen X class diesel-electric road locomotives had been placed in service These locomotives are numbered X1 to X18 (builders' numbers 1796/D88 to 1805/D97 and 1811/D105 to 1818/D112); with the exception of X16, which was displayed at the Festival of Britain they entered service on the following dates: 13/9; 13/9; 21/12; 20/11; 20/11; 21/12/50; 23/4; 3/5; 12/2; 8/3; 24/6; 24/6; 8/8; 8/8; 3/12; 3/12; 3/12/51.

Nos. X1 and X2 were wrecked last year in a spectacular derailment on the Main Line.

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"Within the last few years, there have been quite a number of books published dealing with the construction and operation of model railways. Almost without exception, these have been exclusively concerned with indoor lines, or, if they have referred to out-of-doors railways at all, the reference has been very brief and has hardly broken the ice on the subject.

"That garden railways do require specialised treatment when compared with indoor lines is obvious, and I feel that many model enthusiasts have shrunk from building such a line because they have felt that equipment out of doors rapidly deteriorates and they have not been prepared to risk money on its construction without some prior knowledge of what and what not to do to ensure that the line will stand up to the elements.

"I have now had a gauge 0 garden railway in use for more than ten years. It was laid down in a substantial but quite inexpensive manner and has been in position throughout the war with very little maintenance. It is still as sound and efficient as it was when it was built, and I hope that the contents of the following pages, which are mainly based on my own experiments, will prove useful to others who are contemplating the construction of a railway in the garden but

are chary of starting operations until they know a little more of what they are up against."

—R. E. Tustin in a preface to "Garden Railways" reviewed on page 8.

Most model railroaders these days strive for the greatest possible realism in appearance and operation. Probably this is the reason why comparatively few Australian enthusiasts have constructed outdoor layouts, for the latter have tended more towards ruggedness than towards fine scale construction. It is noticeable, too, that outdoor layouts are most scarce in Victoria, and this is undoubtedly due to the inclement weather for which that State is noted.

We do feel, however, that the Victorian climate in no way defers to that in many parts of the United Kingdom, a country which is the very home of outdoor layouts. And, on the question of fine scale and superdetail, we can only advise readers to study the photographs of Mr. Tustin's own layout which appears in his book. From these, and from his comments, it will be appreciated that he is as much a scale enthusiast as any of us.

In any case, it is possible to have a railway of most realistic appearance and which gives pleasurable operation without rigid adherence to the tenets of fine scale. In fact, the very size and scope of some lines would render them impossible if all features were to exact scale. Probably the most impressive 0-gauge outdoor line in this country is that operated by Mr. Len. Clark of Parramatta, N.S.W., of which a complete description has appeared in recent issues of this magazine. (The illustration in our April/May issue gave an idea of the realism attained.)

Space has always been the bugbear of model railroaders, and not all care for the smaller gauges, nor have the skill and tidiness needed to construct rolling stock or pointwork to, say, a scale of 3.5 mm. If you are one of the heavy-handed brigade, an outdoor layout enables you to use the large gauges — equipment is available up to 10¼ in. gauge! If you are a detail enthusiast, think of the extra detail which can be added in, say, gauge 1. If you are, like the Armchair Man, a disciple of 0-gauge-quarter-inch-scale, think what it means to be able to have 10 ft. radius curves scale-length stations, and so on. There are disadvantages, of course, and they will be obvious, but we suggest that the idea is worthy of consideration, and an outdoor layout would remove some of those parental or uxorial objections to "spending all his time in that stuffy room when he ought to be out in the fresh air!"

Yours, until next month,

THE ARMCHAIR MAN.

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Where shall I put it?
How high above floor level do I want it?
On what shall I build it?
What gauge will it be?
Of what sort of railway is it to be a model?
What kind of locos. and rolling stock shall I run?
Will they be scale or freelance?
Will it be clockwork, electric, or steam?
If electric, what voltage, and where shall I get the juice?
Shall I use 2-rail, centre third outside third, or stud contact?

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LETTERS to the EDITOR

IN SUPPORT OF STEAM

The Editor,
"Railways in Australia."
Dear Sir,

I wish to thank Messrs. Cherry, Stewien and Holmes for writing, and would refer them to my reply to Mr. Rowe (R. in A. 3/51) for answers to some of their views. The purpose of my original letter was to correct a statement, and to suggest a far better way in which a job could be done. It would be reasonable to assume that anyone making such a statement would be unaware of the existence of the class GL Garratts which I showed had more tractive effort and lighter axle-loading than two of the diesels put together. I agree that economics come before sentiment, which is why I base my case on actual performance facts and figures, irrespective of what is supposed to be the fashion of the day. I cannot understand Mr. Stewien's persisting with the statement that more powerful steam engines cannot be used because of higher axle loads. Large Garratts could easily double line capacity without duplication or laying of heavier rail. They could also use existing steam servicing facilities whereas diesel traction will require additional elaborate and costly facilities. How can it be claimed that the length of a Garratt — about 100 ft. — is undesirable when the two diesels will be over 132 ft.?

When Mr. Holmes suggests that the rigid wheelbase of the 10-coupled Garratts may be too long for curves on the 5 ft. 3 in. gauge, he overlooks the fact that such engines would not be used for high speeds and would require only small wheels, resulting in the rigid wheelbase being much the same as a faster 8-coupled engine. 10-coupled engines with a driving wheelbase of over 19 ft. are operating on metre schemes will affect our economy ad- gauge. Surely 10-coupled Garratts with an 18 ft. driving wheelbase could work on 5 ft. 3 in. gauge. On 4 ft. 8½ in. gauge in America, 10-coupled engines have up to 26 ft. 2 in. driving wheelbase. Driving wheelbases can be made flexible to a small extent. Garratts are ideal for heavy mountain runs with numerous curves. Anyway, 8-coupled, and even 6-coupled Garratts could out-perform the diesels on the Hills line. I have previously shown that large, modern steam engines are greatly superior to even 4-unit diesels for hauling heavy loads at speed. They could therefore work heavy trains from Mile End to Tailem Bend and back in one run more easily than the diesels, and at less cost.

I have never advocated oil fuel for Australian locomotives because it has to be imported at high cost, whereas we already have large quantities of good coal which could be easily and cheaply obtained if we want it. I likewise condemn the practice of importing coal at £3/10/- per ton. How would diesel fuel costs compare with steam engines using high-quality open-cut coal at about 10/- per ton at the mine? On Mr. Stewien's figures, diesel fuel costs would then be about 7 times higher than steam fuel costs. Coal in Central Queensland is a long way from the S.A.R., but, after long-overdue lines were built in Queensland, a cheaply-constructed 3 ft. 6 in. gauge line of about 200 miles could be built between the S.W. Queensland border and Broken Hill, as I suggested in R. in A. (6/49). By using super-Garratts — not diesels — to haul 3,000-ton trains, this coal could be delivered in South Australia for £3 per ton with great profit. Even then steam fuel costs would be substantially less than diesel, and other costs are much less for steam in any case. Steam fuel costs could probably be reduced to only half diesel costs by using a percentage of Leigh Creek coal. Garratt design permits grates, ashpans, etc., to be constructed so that low-grade coal can be used more successfully than in conventional engines. It may then be possible to use a fairly high percentage of Leigh Creek coal for less important trains.

Britain has been testing modern diesels and a gas turbine, but has found them inferior to steam engines; the gas turbine, which has suffered a major breakdown, is a long way behind in fuel economy. Gas turbines are a long way from being proved, but Garratts have long ago proved themselves the best motive power on rails. Gas turbines must have reduction gears in

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sions, and the compressor absorbs over 7,500 h.p., which means less than 2,000 h.p. at the drawbar. The best plan would be to bring steam locomotive thermal efficiency up to equal that of the gas turbine, and then forget about the gas turbine.

Even if we are overlooking the threat of war, these costly dieselisation addition to expensive electric transmis- versely, whereas large, coal-burning Garratts will improve it considerably. Surely then, they are at least worth a trial.

Yours, etc.,

ROGER BOLAND.

Sarina, Q'ld.

EDITOR'S NOTE: The worth of Gar- s is amply demonstrated in Africa, notably on the South African Railways, hich system continues to acquire large numbers of Garratts of continuously improved designs. Their worth is also recognised in this country by several systems, and the order placed by the New South Wales Railways will give ample opportunity of studying their performance on other than narrow uge lines. It may be assumed that the South Australian Railways are aware of all this and much more. wever, coal of any kind is desper- ly scarce in Australia — mined coal, that is — and the fact that we should be able to produce more does not alter the fact that production is over 2 llion tons short of requirements each ar. Open cut coal is not of the best quality and the fact that it is cheaper is cancelled out by the necessity to use much more of it to get the same amount of work done. With so much urgent railways work yet to be started, it is unlikely that a long route would constructed through sparsely settled d, uninviting country for the prin- cipal purpose of transporting loco coal, d current coal haulage rates for far ore favourable routes suggest that Mr. Boland's estimate of the cost of Queensland coal railed to South Aus- tralia would be somewhat greater than s estimate. It is worthy of note that Queensland Railways, with this coal on their doorstep, have decided upon large-scale dieselisation; one of the principal reasons given was the high cost of freighting loco require- ents for steam operation.)

(Failing any new aspect being sed, this correspondence must now ease.—Ed.)

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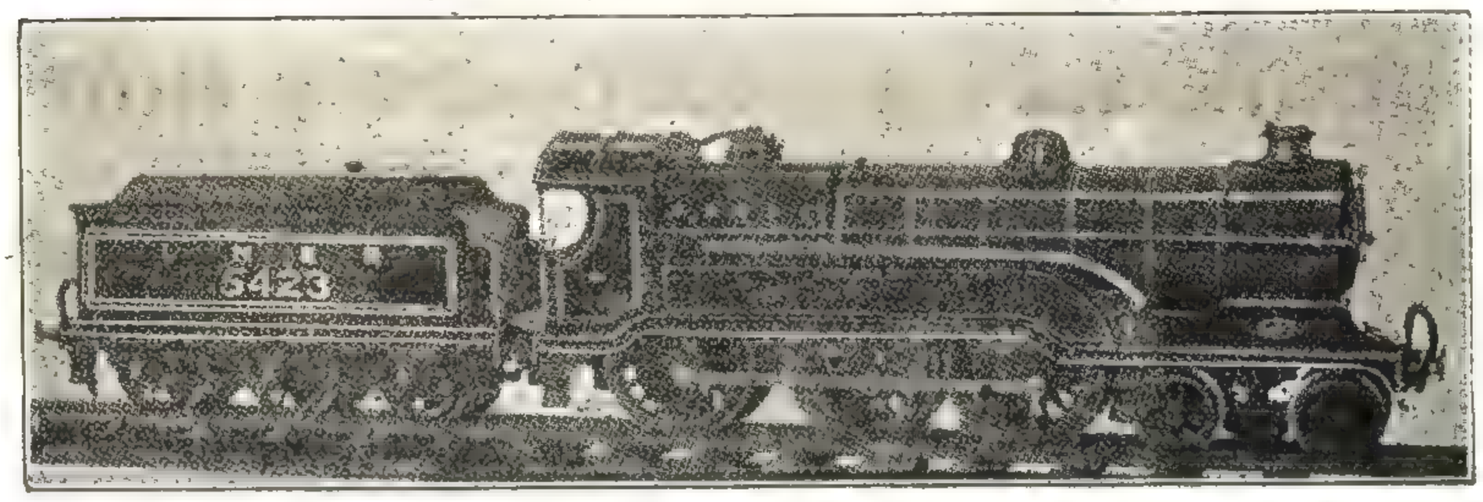

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It is regretted that direct correspondence cannot be entertained.

F. RICHARDS, Hawthorn, Vic.—Your stamp interesting, but we are not in a position to supply information on other than Australian railways. Being returned to you.

J. D. MAHONEY, Point Chevalier, —Not actually due until October is Thanks for good wishes.

T. HOSKING, Ashburton, Vic.—Thanks for news; most helpful.

G. PARKER, Rocklea, Q.—Most valuable and will be used. Thanks.

D. H. SMALL, Strathfield, N.S.W.—News items appreciated.

W. A. PEARCE, Kensington, Vic.— helpful, thanks. The R class trouble seems to have been exaggerated a little.

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MELBOURNE: V.R. Institute, 4th Thursday of each month. Secretary: R. B. McMillan, 21 Evans Court, Toorak, S.E.2, Vic.

Australian Electric Traction Association

MELBOURNE: V.R. Institute, 3rd Friday of each month, at 8 p.m. Secretary: W. G. Mercer, 18 Embling Avenue, Malvern, S.E.4., Vic. SYDNEY: Railway Institute (Devonshire Street), 3rd Thursday of each month, at 8 p.m. Secretary: D. Stewart, 22 Cove Street, Pirchgrove, N.S.W.

National Model Railroaders' Association (Australian Area) welcomes new members. Write to The Area Representative, N.M.R.A., 22 Whish Street, Windsor, N.3, Queensland.

Sydney Model Railway Society.
meets at 273 Castlereagh Street, Sydney (4th Floor), each Monday evening from 6.30 to 9.30. When Monday is a zoned day, meeting is held on the following Tuesday. Visitors are welc Bruce R. Davies, Hon. Secretary, Pacific Highway, MT. KURI GAI, N.S.W.

Victorian Model Railway Society
meets 3rd Wednesday of each month at 8 p.m., at the M Dockyard, Swanston Street, Melbourne. Visitors welcome. Secretary: J. H. Hooker, 1 Shaftesbury Avenue, MALVERN, S.E.4, Vic.

AUSTRALIAN MODEL RAILWAY ASSOCIATION

New members welcomed. Write to the Secretary, 105, Blake St., Reservoir, Vic.

BRISBANE MODEL RAILWAY SOCIETY

Meetings held on 1st and 3rd Thursday of each month at 36 Goulburn Street, Kedron, Brisbane, at 8 p.m. Secretary, C. Harrison, 110 Haig Street, Stafford, N.3 (to whom all enquiries should be made). Gauges 0 and H0/00.

Queensland Society of Model Engineers.

Meetings, 4th Monday in each month at 8 p.m. Contact the Secretary, C. H. Garner, "Elsinor", Gray's Road, Gaythorne, Brisbane, Qld.

ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: I. Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

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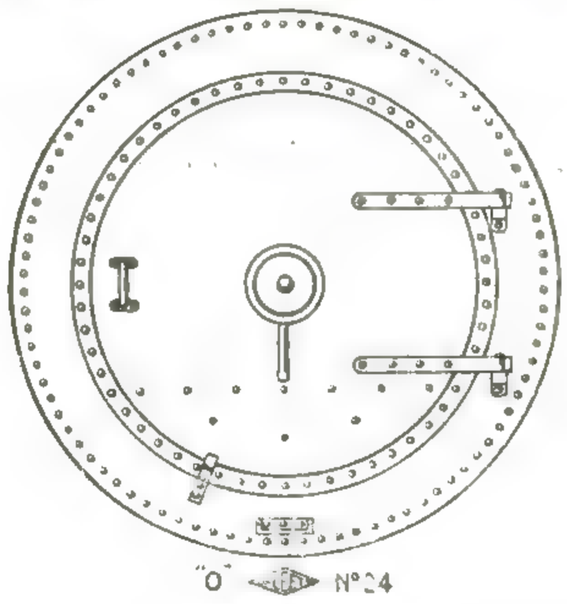

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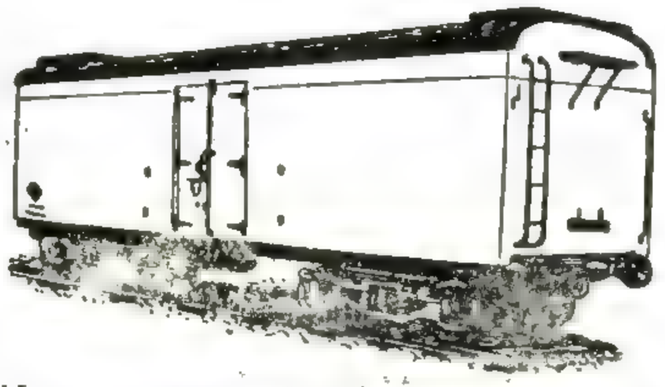

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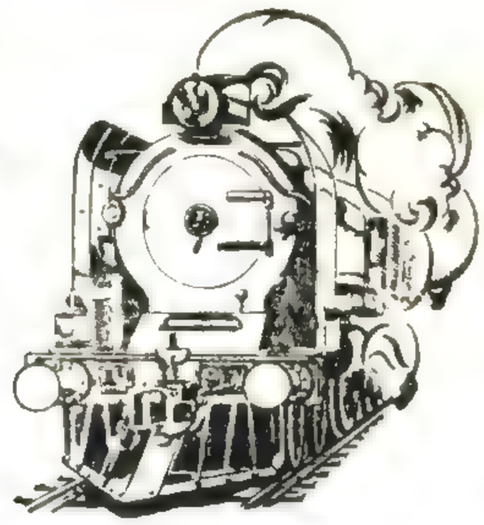

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tons. Although the arrival was 21 minutes late, the stop was cut by seven minutes, to make the departure at 3.14 p.m., only 14 minutes behind the schedule. After climbing for six minutes, the Great Dividing Range was crossed, and the drop of over 1200 feet commenced. Nine tunnels were encountered. I have never seen such beautiful station gardens as those at Spring Bluff and Magoon.

Engine requirements and afternoon tea at Helidon (151 miles), with a departure still 14 minutes late, immediately preceded entry into the double track section and, after Gatton (162 miles), there was a 36 miles express run to Ipswich, 24 miles from Brisbane. I hope that this train's schedule is not typical of the best services on the Queensland Railways as, without any checks, and on grades favouring the engine, 84 minutes were required for those 36 miles—a loss of ten minutes on the booked time. The Down Mail, with four stops totalling 12½ minutes thrown in, did better for the 36 miles approaching Bourke in outback N.S.W.!

However, the station garden at Yarongbula was another delight to the eye, following which a short section of single track, with two tunnels, was encountered and then, near Rosewood, maize nearly four feet high in the middle of October was a new sight to me. The train got further behind time on the run in from Ipswich, taking 52 minutes instead of 46 for the 24 miles to Roma Street, where the arrival was at 7.37 p.m.

At the Tourist Bureau, Brisbane, I found that I should have made a booking for travel back to Sydney on the 10.45 a.m. "Limited" via the North Coast line before leaving a week previously. When I attempted to buy a ticket back to the border, and presented my All-Lines ticket for travel on the N.S.W. portion of the journey, I was referred to an official upstairs. Here I was told that I had apparently been given a ticket for metropolitan travel only! Saying that I had used the ticket for nearly a fortnight was accepted, but carried no weight. I got over the difficulty by purchasing a ticket to Sydney, where I was given a refund on arrival. I asked the conductor on the "Limited" if he could identify the All-Lines ticket. He stated that it entitled me to suburban travel only, and was surprised to hear that I had used it to tour the State. He said no more just then, but returned to the subject later, with the air of an angler about to land a "big 'un."

There is also a second division of the "Limited" in each direction; the 613 miles require approximately 14 hours' running time and, owing to the arrangement of departure times, six complete trains are required to maintain the service; at least two are out on the track at any given time. Engine power was provided by 35 class 4-6-0's as far as South Grafton, where 32's took over. This was owing to the withdrawal of heavier engines in June, 1949, as a result of flood damage to the track. The work over the 101 miles from Broadmeadow to Sydney was done by 38's.

As is usual, drivers get no let-up with regard to curves which, for the 493 miles from South Brisbane to Maitland. average five in every two miles. The longest straight run is of a little more than two miles on the Down side of Kempsey. Many of the curves are from 12 to 20 chains radius but, with the exception of the Macpherson Range, which is the border between the two States, the country is not as rugged as this suggests. The whole length of the line is continually crossing the eastern foothills of the Dividing Range and, for most of the way, the altitude does not exceed 1200 feet. Highest points, other than at the border, are at the top of Red Hill (480 ft.). seven miles before reaching Coff's Harbour, and at the Up end of the Monkerai tunnel (520 ft.), six miles on the Down side of Dungog. The ruling grade between Grafton and Maitland is 1 in 80 in both directions, with 1 in 50 prevailing to the north, but only in short sections.

After a couple of stops ten minutes or so after leaving what is known as the Interstate Station at South Brisbane, the 10.45 ran non-stop to Glenapp, where a halt was made for engine requirements, right on time, in 1 hr. 46 min. for the 61 miles. Engine 3532 had a load of 350 tons, including an MLV louvre behind the van. At Glenapp commences the 7½-mile run involving a rise of 460 ft. to the top of the range at the border. The line follows the Running Creek valley, the main climb being five miles at 1 in 66, with two tunnels through spurs in the ridge. Reverse curves of 12 chains are continuous to within a mile of the top, which is approached by a straight run of ¾-mile through the Border tunnel, occupying 1 min. 32 sec. Border Loop (890 ft.), a crossing place, followed — the highest point between the two capitals. Then commenced a drop of 422 ft. in six miles on a continuous 1 in 66 grade to the approach to Loadstone. Little more than a couple of minutes after crossing the border, the run down the Spiral Loop is commenced. This is achieved by a 12-chain curve, 95 chains long, with two tunnels. The line then runs down the narrow valley of Grady's Creek, which is crossed five times.

The train was right on time at the border, but ran into No. 2 road at Loadstone five minutes early, to make way for the Down Limited (7.40 p.m. ex-Sydney the previous night), which passed through seven minutes ahead of time. After crossing the second division of the Limited (8.03 p.m. ex-Sydney) at Kyogle, Casino was reached on time at 2.35 p.m. Here 26 minutes were allowed for refreshments and to change engines, 3502 coming on in charge of a South Grafton crew. Seven miles further on, the Down North Coast Mail, also on time, was crossed at Leeville, after which the run to Grafton was strictly to time. The approach to South Grafton was on the lower level of the two-deck bridge over the Clarence River and, as the train was not in need of the recovery time allowed on that section, arrival was three minutes early.

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THIS MONTH'S COVER

The train making all the smoke is the Up "Riverina Express", of the days before air-conditioning, getting away from Junee, N.S.W., headed by non-streamlined Pacific No. 3808. The leading car is an MCE (1st/2nd) with 6-wheeled trucks; following is a set of R class cars, including a buffet (RBR) car, then an FS (2nd, all-steel), another MCE, and a van. (NSWR official photo.)

This being the southern limit for the 35 class, 3285 came on to handle the load for the 198 miles to Taree. Its hardest work in that direction commenced a mile after the start, with a bank of three miles at 1 in 80, almost continuously over reverse curves down to 15 chains radius. No doubt this, with a load of 350 tons, accounted for the schedule for the first staff section being exceeded by 2½ minutes. This was soon regained and Coff's Harbour, the furthest point east on the run, was reached on time at 6.39 p.m.

(To be continued)

NEW "J" CLASS 2-8-0's

Victorian Railways

The price of fuel oil having trebled during the period since its introduction as locomotive fuel on the V.R., consideration is being given to the possible equipment of the "J" class 2-8-0's (now under construction by Vulcan Foundry) with STUG brown coal dust-fire apparatus. As the "J's" are planned currently as oil burners, some delay would be experienced in obtaining delivery until a decision is reached.

Dedication to Service

The very spirit of Red Cross is dedication to service . . . but the spirit needs the backing of the people to keep it alive in its practical application. The blood banks, the emergency relief services for disaster victims, sanatoria to fight tuberculosis, the hundreds of tasks that are helping disabled service men and women, the long, patient nursing of tiny cripples, the aged and infirm . . . We can all help Red Cross to maintain the grand services that mean so much to those who have been hit hard by fate.

This is Red Cross Month

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DIESEL-ELECTRIC LOCOMOTIVES
Data on Clyde — G.E. Models

In view of the increasingly widespread use of diesel-electric locomotives on the railways of this country, we publish the following comprehensive survey of the characteristics and capabilities of Clyde-G.E. locomotives. These locomotives are in service on the Commonwealth Railways and are on order for the Victorian Railways.

The information was supplied by the manufacturers' representatives; and statements made do not necessarily represent the views of this journal.

Techniques have been perfected whereby, on a given Railway System, operating capabilities of a locomotive under specified conditions can be accurately determined. By plotting speed, distance curves, graphic train charts and cycling diagrams, time schedules are established from which the number and combination of diesel locomotive units required to handle a given volume of traffic are derived. Such surveys enable Clyde to accurately determine tonnage ratings, operating costs and capital outlay in locomotives and facilities, and prepare comparisons with all types of locomotive power in service or contemplated.

The freight tonnage that any locomotive can haul is dependent on operating conditions on any given system, such as ruling grades, curves, speed restrictions and conditions of track, etc. These factors being known, it is possible to calculate tonnage ratings accurately.

The following tonnage ratings indicate the capabilities of Clyde-G.M. Diesel Electric Locomotives for various grades, using single and multiple units and assuming adequate weight on drivers.

H.P.	Grade	Gear Ratios		
		62:15	58:19	56:21
1500	1:100	1340 tons	900 tons	800 tons
1500	1:50	700 tons	480 tons	400 tons

Tonnage ratings for 2, 3 and 4 Locomotive units will be multiples of the above values.

Power Plant

The power plant installed on all Clyde-G.M. locomotives is the Model 567 B Engine. This is a 2-stroke, V-type engine built in four sizes comprising 6, 8, 12 and 16 cylinders. Components, parts and fittings are interchangeable throughout the complete range. The 2-stroke engine has one power impulse for every two strokes of the piston as against one power impulse for every four strokes of the conventional 4-stroke engine. Consequently, the 2-stroke gives twice as many power strokes as the 4-cycle engine, and develops approximately twice the power as the same size 4-stroke engine, naturally asperated. Turbo pressure type charges operated from the exhaust gases are commonly fitted to 4 cycle engines to increase output and certainly improve performance, but at extra cost both in manufacture and subsequent maintenance. The horsepower-weight ratio of the 567 B engine is 20 lbs. per horsepower available for traction.

Special consideration has been given in designing this range of engines to provide maximum accessibility for maintenance and repair. Typical example of the accessibility achieved is disclosed by the fact that the normal time allowed for removal and replacement of a Reciprocating Assembly comprising piston, liner, head, carrier and con rods is 3½ man hours. This example constitutes a labour-saving development whereby the complete assembly is withdrawn and replaced with a new unit, thus releasing the locomotive to traffic with a minimum of delay. The worn assembly can then be dismantled and thoroughly inspected and worn parts renewed and returned to stock for future use.

Considerable ingenuity is evident in the structural details of the 567 B engine, particularly in the universal adoption in all highly stressed parts and components of drop forgings in heat treated alloy steels, which are incorporated in the main engine structure by special welding techniques resulting in a modern power plant of exceptional ruggedness and light weight.

The alloy cast iron pistons used in this engine are of the 2-piece floating type. The type of construction is one in which the piston is supported by a gudgeon pin carrier, permitting efficient cooling of the piston crown and obviating hot spots. As the piston is free to rotate in its cylinder, uneven wear is entirely eliminated. Piston cooling is achieved by directing oil under pressure through a drilled passage in the gudgeon pin carrier which impinges directly on the underside of the piston crown.

The main bearings of this locomotive have been improved to the extent that the upper halves need inspecting only every six years and may be re-used if still satisfactory, whereas the lower half main bearings under normal usage, will not require renewing under three years' continuous service.

Inspection procedures and techniques adopted during engine construction include all modern flaw detection devices to which all components are subjected before

(Continued on page 7)

The Moreton Central Sugar Mill, near Nambour, Q., owns this lively little 0 6-0, here seen hauling sugar cane alongside the main road to Nambour from Coolum. "Moreton" is one of the several 2 ft. gauge locomotives operated by the mill, and has, unusually, outside Stephenson valve gear. Tom McCaw was the photographer.

S.A.R. PACIFIC

Here's a close-up view of one of the 600 class 4-6-2 locomotives of the South Australian Railways, No. 609, "Duke of Gloucester." These massive Pacifics were built 26 years ago by Armstrong-Whitworth Ltd., of England, as part of the Webb rehabilitation scheme. (S.A.R. official photo.).

NARROW GAUGE GARRATT

No. 1009 was the first of the 4-8-2 + 2-8-4 Beyer-Garratt locomotives of the Queensland Railways (3 ft. 6 in. gauge) to be assembled and tested. Reader S. C. Fraser got this picture between trials at Mayne locomotive depot, Brisbane, Q. Colour scheme of these locos. is midland red with yellow lining and lettering.

Q.R. BEYER-GARRATT DATA

Wheel Arrangement: 4-8-2 and 2-8-4.
Total Wheelbase: 81ft. 0in.
Engine Wheelbase: 29ft. 0in.
Driving Wheelbase: 14ft. 1½in.
Driving Wheelbase (rigid): 9ft. 5in.
Driving Wheel Diameter: 51in.
Weight in Working Order:: 137 tons.
Weight on Drivers: 2 x 38.56 tons.
Weight on Pilot Trucks 2 x 20.30 tons.
Weight on Inner Trucks: 2 x 9.64 tons.
Total Weight of Engine: 2 x 68.5 tons.
Tender — Water: 3,800 gallons; Coal: 6 tons.
Boiler Pressure: 200 lb. per sq. in.
Grate Area: 39 sq. ft.
Evap. Heating Surface: 1,668 sq. ft.
Superheating Surface: 453 sq. ft.
Adhesive Factor: 5.6.
Tractive Effort: 52,770 lb.
Cylinders, D x S: 13¾in. x 26in.
Year Built: 1950.
(Data supplied by Mr. S. C. Fraser.)

TRANSCONTINENTAL SPEED-UP SOON

Melbourne-Adelaide-Kalgoorlie Alterations

Although no details have been released, it is known that conferences have been held between representatives of the Victorian, South Australian, and Commonwealth Railways with a view to the early introduction of vastly improved rail time tables between Melbourne, Adelaide, Port Pirie, and Kalgoorlie, consequent upon the introduction of diesel locomotives over those sections. The condition of the tracks rather than lack of power has limited train speeds with steam locomotives.

Although diesels are already operating between Serviceton, Vic., and Adelaide, S.A., and between Port Pirie Junction, S.A., and Kalgoorlie, the improved times will not be introduced until the Victorian Railways have their new diesels in regular service between Melbourne and Serviceton. Originally expected in April, the first of these locomotives may not now be available until June of this year.

Melbourne-Sydney Unchanged

Although the "Spirit of Progress" between Melbourne and Albury, N.S.W., will be diesel-hauled in the near future, no major speed-up is likely on this section. Services between Albury and Sydney, capital of New South Wales, will continue to operate with steam locomotives for some time to come; track conditions and major works in progress debar any acceleration here.

Sydney-Brisbane Acceleration

It is understood that diesel-electric locomotives will be used between Sydney and South Brisbane, Q., with improved times.

VICTORIAN RAILMOTORS

The numbers of the V.R. Leyland railmotors were inadvertently omitted from the caption to the illustration on page of our last issue. These cars are numbered RM51 to RM53.

N.S.W.R. NOTES
More New Diesels in Service

40-class diesel-electric (Alco-G.E.) locomotives in service at the time of going to print include Nos. 4001-2, 4005-14. They are in regular use on the Enfield-Broadmeadow freight run, and have also been used on the Western and Southern lines.

Improved Working at Muswellbrook

On a date yet to be announced, double line working, with automatic colour-light signals, will be introduced (between Grass-tree and St. Heliers Muswellbrook No. 2 Colliery Junction) on the Northern line. This section is approximately one mile in length, and carries heavy coal traffic, in addition to normal main-line freight and passenger working.

PRIVATE LINE SUCCESSFUL AGAIN
Silverton Tramway Dividend

The Silverton Tramway Co., which operates a 40-mile passenger and freight railway between Broken Hill, N.S.W., and the South Australian border, has declared an interim dividend of 7½% for the half-year ended 31/12/51. It is hoped that current operations will enable a further 10% to be paid as at 30/6/52. giving 17½% for the full year. A similar rate was paid last year. Increased taxation has had to be met, together with wage increases, but the outlook for the future seems excellent.

Heavy and regular ore traffic from the mines at Broken Hill is the major factor in the amazingly successful operation of this line. All four principal private lines in Australia run at a profit, but none have ever approached the Silverton Tramway's record.

WATER SHORTAGES
Difficulties in Queensland

The drought in the Dalby, Q., district, states a correspondent, is very bad. A water train, carrying 30,000 gallons, daily runs from Tara, 53 miles away, into Dalby daily. There is only about three weeks' supply at Tara. When that is exhausted, water will be obtained from Toowoomba, 52 miles away. To aggravate the position, the Dalby railcar is in dock at Ipswich (under overhaul — 13 months overdue), and the steam trains running in lieu cause a further drain on the supply.

NEW CROSSING LOOPS FOR BROKEN HILL-MENINDIE SECTION
Train Control Office for Broken Hill

To meet particularly heavy movements of water trains between Menindie and Broken Hill, the New South Wales Railways have brought into use additional crossing stations at Wahratta and Mount Gipps. Several more crossing stations will be brought into use on this section in the near future. All will have ordinary Train Staff and Ticket working.

On 4/3/52, the date of opening the first of these new staff sections, a temporary Train Control Office will be opened at Broken Hill. The section, Ivanhoe-Broken Hill, will be temporarily removed from Orange Control, and will be supervised from the new Broken Hill Control.

S.A.R. LOCO. SCRAPPED

A correspondent in Adelaide reports that Rx class locomotive No. 226, a 4-6-0, which was involved in the Long Gully smash on 22/12/51, is being broken up at Islington Workshops. The Rx class are an obsolete type built prior to the Webb rehabilitation scheme.

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Victoria. XW 2834

DIESEL ELECTRIC LOCOMOTIVES (from page 5)

assembly, thus ensuring at all times maintenance of the highest quality standards.

Unit Injection

Most modern diesel engines adopt the solid injection system to introduce fuel into the cylinder. This is achieved by two methods:—

(a) Injection pumps are mounted either individually or collectively outside the engine to supply fuel under pressure to the injector mounted in the cylinder head which "meters" the fuel according to the pump setting and atomises the fuel into the combustion chamber.

(b) In the 567B engine unit injection is employed. Its name derives from the fact that the pump and atomiser are built into the injector and do not require individual units with high pressure fuel lines. The unit injector, exclusive to General Motors power plants, has few moving parts and is precision built, as instanced by the fact that the pump piston is fitted into its cylinder within a tolerance of .0001. This extreme accuracy is necessary to prevent oil leaking past the piston for the pressure in the fuel pump may reach 20,000 lbs. per square inch.
High pressures of this order are necessary to force the oil through the six minute holes in the spray nozzle with sufficient power to penetrate into the combustion chamber against a compression pressure of 600 lbs. per square inch.

Availability

The availability of the Diesel Electric Locomotive for useful work when properly maintained can exceed 95% which, in effect, means that this type of locomotive needs to spend only 5% of its time in the shop. This compares with between 50% and 65% availability for the steam engine depending on type and actual operating conditions. Consequently, diesel electrics can perform between 30% to 45% more work in the same period of time than can steam power of the same capacity.

Basic Economies

The diesel locomotive is superior to the steam engine for several reasons, the main of which are as follows:—

(a) The thermal efficiency of the diesel locomotive is approximately three times that of the steam locomotive, that is, 35% against 10%.

(b) A diesel electric locomotive will do as much work with one tank of diesel fuel as will a steam locomotive using eight hoppers of coal. In addition to direct savings in fuel consumption there is also a considerable saving in costs entailed in transporting coal to and from depots in any given system.

(c) Tractive effort is dependent on weight on drivers. Electrical transmission on a diesel locomotive enables

(Continued on page 9)

(Above): Victorian Railways' "X" class 2-8-2, No. 32, hauling a passenger train between Melbourne and Seymour, Vic. This locomotive has been the "guinea pig" of recent brown coal trials. (Courtesy, V.R. Publicity.)

(Left): Samples of pulverised brown coal from Yallourn, Vic., were sent to the U.S.A. about eighteen months ago for testing by the Bituminous Coal Research Committee, of Baltimore, Md. Here a railwayman fills drums for export from one of the CK class tank cars. (Courtesy, V.R. Publicity.)

V.R. MAY USE MORE BROWN COAL DUST

Oil Fuel Proves Costly

Increase in the cost of oil fuel from £8 10/- to £26/10/- per ton over a short period has made the operation of oil-burning locomotives a costly proposition. Australian black coal is in short supply, and imported coal is costly. The only suitable alternative is the use of brown coal, which is mined on a large scale at Yallourn, Morwell and, to a lesser degree, elsewhere. One set of PC/C equipment has been fitted on X32, a heavy 2-8-2 freight locomotive. A second set of this equipment, which uses the fuel in pulverised form, is to be fitted to an R class 4-6-4 for fast passenger service. It is now under consideration to equip all 60 of the J class 2-8-0's on order in Britain to burn pulverized brown coal instead of oil.

Special Rolling Stock and Storage Needed

Because of the danger of explosion, special tank cars and fuelling facilities are required to handle the pulverised fuel. At present these facilities exist only at North Melbourne and, as the J's will be used on outlying country routes, much new construction will be involved. There are at present only two of the special CK tank cars.

The illustration at left shows X32 being fuelled from one of the CK class tank cars. Safety precautions must be observed carefully in this operation, as pulverised brown coal is highly explosive when mixed with air.

The CK cars were built on the underframes of GY class gondolas. (Courtesy, V.R. Publicity.)

TRAINS ON POSTAGE STAMPS

Some Attractive Specimens

In his comments on "ferrophiliacs" (R. in A., 8/51), Mr. Frank Richards referred to the great variety of attractive postage stamps from all parts of the world. Through the courtesy of the Publicity Department of the Victorian Railways, we are able to show these interesting examples. The first stamp featuring railways was a 1c. issue of New Brunswick, dated 1860.

Stamps depicted here include (right, top row): 3c. U.S.A. (1869), Fl. 50 France—centenary of mobile post office (1944), 50p. Finland—Red Cross appeal (1944); (bottom row): 5c. Djibouti (1943), 5c. Uruguay (1895), 25D Iran (1942); (below, top row): 30c. France—International Railway Congress (1939), Fl. 50 France (1939); (middle row): 15c., 20c., 40c., Denmark—railway centenary (1947); (bottom row): Switzerland—Swiss Federal Railways Centenary (1947).

The Uruguayan stamp is particularly interesting as it depicts one of the famous Stirling 8 ft. single-driver express locomotives.

power to be applied direct to each axle through individual traction motors mounted thereon. Consequently, the full locomotive weight can be carried on the drivers and greater tractive effort is developed than is possible on steam locomotives of corresponding horsepower. This can conveniently be illustrated by comparing the largest steam locomotive built to date with our 1,500 h.p. main line locomotive operated in multiples of 4 units, to develop 6,000 h.p.

	Mallet Steam Locomotives	Diesel Electric Locomotives
H.P.	7,000	6,000
Wt. in Tons	500	439
T.E. in lbs.	135,375	240,000

(d) Considerable economy is achieved on diesel electric locomotives through dynamic braking, whereby the traction motors act as generators and so retard trains with very little, if any, use of air brakes except on very severe down grades. The actual saving in brakes used, which amounts to thousands of tons of cast iron per annum throughout the world to-day, is in itself considerable, apart entirely from the reduction in wear on the tyre profiles throughout the train.

(e) Diesel electric locomotives are to-day built in standard units, whereby H.P. and tractive effort can be varied to suit individual railways by multiple unit operation. This eliminates the previous practice in steam of ordering special purpose locomotives to meet individual railways' traction requirements, and offers greater flexibility and utilisation with a given pool of motive power. In developing and producing standard locomotive units offering opportunities for multiple unit operation to meet various service requirements, General Motors have shown considerable courage in establishing a practice at variance with established railway custom in ordering special purpose locomotives to their own design and specification, and foresight in visualising the great advantages accruing from standardised production. These are offering maximum manufacturing economies and correspondingly low purchase price; opportunity to continually develop and perfect standard components in accordance with modern manufacturing materials

(Continued on page 12)

MODEL RAILWAYS

LETTERS FROM THE CHAIR

Restrictions Again

Following a brief period of plenty, it has recently become increasingly difficult to obtain model railway equipment from sources overseas. Latest moves at Canberra suggest that this situation will be intensified.

Unfortunate as it is in many respects, this development should have one good result in that Australian manufacturers will have another chance to establish their products and to extend the range of those products. This applies equally to the manufacturers of tinplate equipment, sold in sets, as to the makers of scale model parts and accessories.

The one danger is that irresponsible commercial firms and fly-by-night back-yarders will attempt to cash in on the situation, as they did during the immediate post-war period.

Model rail-roaders can combat this by buying only the products of reputable manufacturers, be they big or small, both for their own requirements and when considering the birthday problems of son or nephew.

Don't be too impatient if Australian products seem dear, or their range inadequate. Although a growing fraternity, model railway enthusiasts in this country are still far from sufficiently numerous to permit of manufacture on a proper mass-production basis. Whatever you may think of them, none of our Australian manufacturers has reached the Rolls-Royce and ancestral castle stage as yet!

Cheerio, till next month.

THE ARMCHAIR MAN.

UNIQUE MODEL RAILWAY

Interesting German Replica

By Günter Stetza.

Railway models of considerable largeness and importance have been built and shown to the public very often. They deviated one another by size or special statement and features only, whilst the operating railway and its arrangement is always predominating as characteristics.

Proceeding from this more or less monotonous method, the tool-mechanician, Erwin Rock, of Wuppertal, has built a model-show which is unique and original in its kind, because the prototype of his model is unique in the whole world, too: The famous Wuppertal Suspension Railway as model, constructed within 30 years of hard and expensive work. Mr. Rock has spe[nt] 10,000 working-hours by using about 1,100 yards of cables for the whole suspension route of 160 feet mileage with end loops, where 8 suspension trains of 2 cars each are running. Several end and intermediate stations are arranged, corresponding to the buildings of the "real" suspension railway in every respect. The measure amounts to 1 : 45, the whole arrangeme[nt] is held by 30 frame beams. Model operation is ma[de] by long distance service with a voltage of 20. By this way, collisions are impossible because of automa[tic] blockings and contacts of safety.

A night view of a station on the Schwebebahn mo[nor]ail with monorail cars at each platform.

When Mr. Rock's suspension model exhibition was opened at first in the City of Wuppertal, the success of this unique show turned out to be a sensational event. Erwin Rock is now occupied producing [the] models in other places, where people, young and old, are very much inspired.

(Editor's Note: The full-size Schwebebahn, or Barmen-Eberfeld Suspended Monorail, runs between the two cities named, in the Wuppertal, partly over streets, partly over railway, and partly over the river Wupper. New cars have been added recently as part of a rehabilitation and modernisation scheme. Oth[er] pictures of Herr Rock's model show the incorporation of a section of 0 gauge railway, running beneath the Schwebebahn.)

AND NOW — FERROEQUINOLOGISTS!

Editors are more or less immune to shock, and we did not turn a hair when confronted with the term "ferrophiliac" (see August issue).

Now we are assured that we are "ferroequinologists" (students of the iron horse)! Authority for this is the "Model Railroader".

We prefer to remain plain, ordinary railfans.

MODEL SOCIETIES

An encouraging sign has been the formation recently of model societies and clubs in country centres. Two such societies have been formed, at Wollongong, N.S.W., and Young, N.S.W., respectively. The Young society has already arranged an exhibition f[or] 15th March.

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Wood and Cardboard in Modelling

By Cliff Richardson

Such articles on model-making as we have been able to publish have dealt invariably with metal construction. This month we commence a short series on the use of wood and cardboard; these notes appeared, in a longer form, in the A.M.R.A. Bulletin by kind permission of the editor, of which they are reproduced here. The author (who is not related to the editor of "R. in A.") is the president of the A.M.R.A.

Although a train is often described as "a juggernaut of iron and steel", the wood content of even a modern train is often surprisingly high. Veneers, plywoods, laminated woods, sawn planks, and beams, all play their part in keeping full-size railways operating. In these articles we discuss the use (and misuse) of wood in model railroading, together with its close ally, that oft-despised material—cardboard. However, let's get down to business.

Firstly, you can't use the end of a butterbox, or the side of a packing case, and expect to get quality results in your models! The fellow who pays for the packing case isn't likely to specify best seasoned silver ash in its construction. Rather does he order the cheapest and roughest material consistent with ease of handling and safe arrival of his goods. You can use such a source of supply, and take the risk of subsequent warping and splitting! Remember that you will probably spend at least £10 worth of your time on your model, be it of wood or metal.

If you use metal, you don't select a rusty slab of buckled sheet steel from the nearest municipal dump. By the same token, your few shillings spent on the purchase of good wooden material will become a better investment in direct relationship to the amount of time and detail you lavish on your project. Anyway, ten shillings will buy enough good quality stuff for several pieces of rolling stock.

"Cardboard"

Now for cardboard, a name daily applied to describe a multitude of different paper boards, each made for a specific purpose.

We are interested in Bristol Board, a superior sister to these pulp boards. This is a high quality card in various "weights" or thicknesses, and familiar in the form of visiting cards. Large sheets are available and, although I invariably use white, I believe this card is obtainable in several colours. Bristol Board has a hard, fine satin finish on both sides, is even in texture and thickness, scribes well, will not readily fray on a cut edge, and, perhaps most importantly, takes paint beautifully, and stays painted.

Whilst wood can be used alone, when using Bristol Board it is best to have a backing of wood or metal. Bristol Board on a wood backing will simulate sheet steel to perfection and, in its thinner forms, will take the finest of rivet impressions.

Resistance to Damage

Wooden models have an inherent resistance to superficial damage. On every layout, sooner or later, a loco. strikes the side of a box car standing too close to a turnout. In such cases, the side panel of a metal car is often depressed sufficiently to require a major operation of reconstruction. In the same circumstances, a wooden car will, if correctly built, show only a tiny indentation, which can be repaired without the necessity of removing roof or floor.

(To be continued)

(Further instalments will cover the do's and don'ts of wood and cardboard construction.)

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(Continued on page 14)

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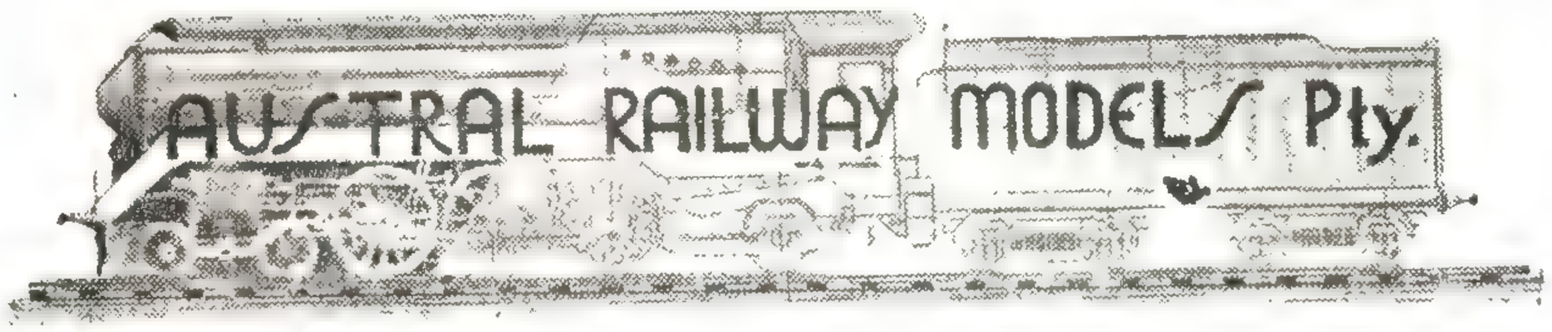

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FAN MAIL

J. M. DEAN, Pascoe Vale South, Vic.—Thanks—wish there were more of the people you mention!

J. H. WESTERN, Glen Iris, Vic.—N[illegible] thanks.

B. D. KENYON, Murray Bridge, S.A.—Much appreciated. See note re "Australian Locomotives" elsewhere this issue.

W. SIMPSON, Asquith, N.S.W.—A conference has been held to discuss this—see news item this issue. I remember the railbus you mention, but have no details. They are used for official purposes now.

QUESTION BOX

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It is regretted that direct correspondence cannot be entertained.

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(60 pp., 5 in. x 7¼ in. — our copy Meadmore Models, 5/6.)

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(196 pp., hard cover—our copy, McGill's Agency, 30/-.)

(f) Further, diesel locomotives are designed to permit of 100% interchangeability of components, fittings and parts, offering opportunities for adopting mass production methods of manufacture, resulting in considerable savings in unit production costs as compared with steam locomotives, which are invariably "custom" built with correspondingly high cost for replacing parts. Additional savings accrue due to substantial reductions in time and costs in maintaining, servicing and overhauling diesel locomotives. It has been computed that in America costs of repairing diesel locomotives which have been maintained in good service condition approximate half that of a steam locomotive for an equivalent amount of work done. The combination of these basic economies offers a locomotive capable of producing twice as much work at approximately half the cost of an equivalent steam locomotive in the same period of time.

(to be continued)

Club Notice Board

Australasian Railway Historical Society
SYDNEY: Railway Institute (Devonshire St.), 2nd Tuesday of each month. Secretary: H. McDonald, 3a Oxford St., Burwood, N.S.W.

MELBOURNE: V.R. Institute, 4th Thursday of each month. Secretary: R. B. McMillan, 21 Evans Court, Toorak, S.E.2, Vic.

Australian Electric Traction Association
MELBOURNE: V.R. Institute, 3rd Friday of each month, at 8 p.m. Secretary: W. G. Mercer, 18 Embling Avenue, Malvern, S.E.4., Vic. SYDNEY: Railway Institute (Devonshire Street), 3rd Thursday of each month, at 8 p.m. Secretary: D. Stewart, 22 Cove Street, Birchgrove, N.S.W.

National Model Railroaders' Association (Australian Area)
welcomes new members. Write to The Area Representative, N.M.R.A., 22 Whish Street, Windsor, N.3, Queensland.

Queensland Society of Model Engineers
meets 4th Monday of each month, at 8 p.m. Contact the Secretary, C. H. Garner, "Elsinor," Gray's Rd., Gaythorne, Brisbane, Q.

Sydney Model Railway Society.
meets at 273 Castlereagh Street, Sydney (4th Floor), each Monday evening from 6.30 to 9.30. When Monday is a zoned day, the meeting is held on the following Tuesday. Visitors are welcome. Bruce R. Davies, Hon. Secretary, Pacific Highway, MT. KURING-GAI, N.S.W.

Victorian Model Railway Society
meets 3rd Wednesday of each month at 8 p.m., at the Model Dockyard, Swanston Street, Melbourne. Visitors welcome. Secretary: J. H. Hooker, 1 Shaftesbury Avenue, MALVERN, S.E.4, Vic.

AUSTRALIAN MODEL RAILWAY ASSOCIATION
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BRISBANE MODEL RAILWAY SOCIETY
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ADELAIDE MODEL RAILROADERS meet every Tuesday night at 8.00 p.m., the meeting place alternating between the Y.M.C.A., Gawler Place, and the different members' homes. Visitors welcome in either circumstance. Secretary: I Greenwood, 15 Buttrose St., Da Costa Park. Phone: X 3233.

THE SOUTH AUSTRALIAN SOCIETY OF MODEL AND EXPERIMENTAL ENGINEERS holds meetings on the second Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Dennis Street, Unley, S.A.

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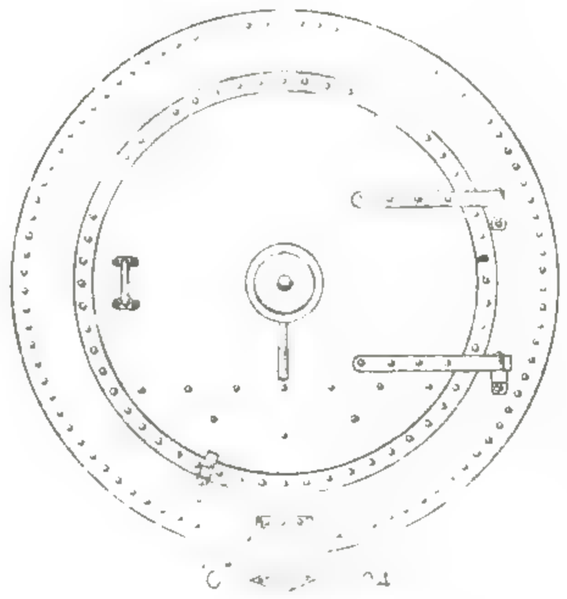

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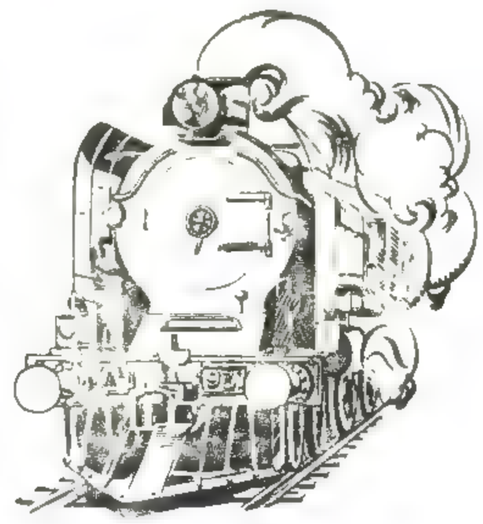

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RAILWAYS IN AUSTRALIA

MONTHLY 1/3

The Magazine about Australian Trains

Published month'y by TRACTION PUBLICATIONS, 29 Seymour Grove, Brighton Beach, S.5.
Annual subscription: 15/- posted (U.S.A. & Canada, 2 dollars).

Vol. V, No. 4 — 15th APRIL, 1952

New "Daylight" Express for N.S.W.R.

No. 27 Down North Coast Daylight Express, first of the new [illegible], air-conditioned, diesel trains of the New South Wales Railways, passing Monkerai crossing loop on the North Coast Line. Note the staff exchange apparatus in the foreground, and on the leading car.

The North Coast Daylight Express runs regularly between Sydney and Grafton, N.S.W. Details were given in our January/February issue.

These fine trains comprise two motor and two trailer cars, and are equipped for multiple-unit operation in 4, 8 or 12-car sets.

Photo by reader J. Stormont of Homebush, N.S.W., on HP3 film at 1/150th sec., f16, on 27/11/51.

Paddington Was a Cathedral

(Reprinted from "Modern Transport")

For a brief spell on Friday, February 15, 1952, Paddington Station assumed the aura and panoply of a vast cathedral. Where normally all is noise and commotion no sound broke the silence but the measured tread of marching men. Yet under Brunel's stately and spacious span, with its draped columns, were guards of honour and many mourners, there to do final homage to their departing King. The beautiful strains of saddening music ceased as the gun carriage bearing on high the mortal remains of their revered Monarch, passed beneath the station's portal with its hanging wreath of poppies and its inscription on purple drape: "The way of duty was the path to glory." How superbly marched the sailors in their close formation, and with what precision did the guards of honour salute the coffin as it was brought before the funeral coach.

The young Queen, the Queen Mother, Princess Margaret, and the Princess Royal alighted from the Irish coach and stood together on the carpeted platform. The four dukes came to attention behind them. To the shrill piping of a naval party the coffin was slowly carried into the funeral coach on the sturdy shoulders of the bearer party of the King's Company of the Grenadier Guards. The doors of the funeral coach—with its white roof and black sides relieved only by the royal crest—were sealed. A few moments later—at noon precisely—the royal ladies entered their saloon by the door nearest the funeral coach; the royal Dukes entered by the lower door, whilst other royalty entrained in the next saloon. Members of foreign missions and governments, and other high officers proceeding to Windsor, joined the processional train standing at No. 9 platform.

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ROYALTY AND RAILWAYS

Ever since Queen Victoria set the seal of her approval on the new mode of travel, railways have played a large part in the lives of British sovereigns and their families. On their annual visits to Balmoral and Sandringham, and when travelling about the United Kingdom on their official duties, their Majesties invariably made use of the Royal Train. Especially was this so during the last war when King George VI, never sparing himself in his efforts to comfort and encourage his people, made long journeys to remote parts of the country. The writer remembers particularly one occasion when, travelling to Liverpool, their Majesties spent the whole day in the dockyards, on the wharves, and on board ships in the Mersey, boarded their train in the evening, and travelled through the night to a remote part of the Western Highlands. Here, starting at 8 a.m., they devoted the next day to visiting ships and service units training for D-Day. That evening, they boarded the train again, and set off for yet another day's round.

It is most fitting, therefore, that His Late Majesty should have made his last journey by train.

The funeral train on No. 8 platform, the L.N.E.R. liveried coaches with all blinds drawn, remained silent and sombre. Not a sound came from its engine. One of the famous Swinden-built Castle class, long familiar on the former G.W.R., it bore the nameplate "Windsor Castle"; on the side of its cab was a tablet recording a day at Swindon in April, 1924, when No. 4082 "was driven from the works to the station by His Majesty King George V, accompanied by Queen Mary, on the occasion of the visit of their Majesties to Swindon". Sixteen years ago "Windsor Castle" drew the funeral train of King George V; to-day that sad and dignified duty was being performed by a sister engine built in 1948. Its smokebox was embellished on each side with the royal coat of arms on purple facings, a royal crown surmounting its centre headlamp.

Throughout this solemn interlude the silence had been broken only by the champing of the horses' bits and the jingling of their bridles— the restless horses of the royal carriages and of the Sovereign's Escort, and of the Escort Commander, Field Officer of the Sovereign's Escort, Standard coverer and trumpeter, who had taken up positions facing the royal train. But with the sealing of the train came the plaintive and reverberating sound of the pipes of the Scots Guards playing "Flowers o' the Forest". There followed majestic music from the bands of the Coldstream Guards and the Scots Guards: sad and glorious music which lent enchantment to the scene. Shafts of sunshine filtered through the glass roof, arousing a spirit of exaltation: Paddington had become a cathedral.

Meanwhile a blind in the royal saloon had been discreetly raised and a pale young face surveyed the sacred and memorable scene. Punctually at 12.35 the magnificent locomotive and its precious load, to the strains of Chopin's "Funeral March", passed almost noiselessly out of the station. The impressive and beautiful train was bearing another beloved King on his last journey from the capital.

EASTERN REGION FUNERAL TRAIN
Wolferton — London.

On the earlier journey from Wolferton (Eastern Region) the station for Sandringham, the funeral train was drawn as far as Kings Lynn by a Sandringham class 4-6-0 "Ford Castle". From Kings Lynn, No. 70000 'Britannia", the first B.R. standard Pacific, took over for the remainder of the journey to London for the lying in state of His Late Majesty.

HOLIDAY BY RAIL

By C. EINSIEDEL
(Continued)

This month Mr. Einsiedel continues the story of his railway vacation, commencing with the latter part of the journey from Brisbane to Sydney via the North Coast line of the New South Wales Railways.

It was just a little early for the Grafton jacaranda trees; the blooms were half-out, and the streets were being decorated in readiness for the tourist influx.

Continuous questioning of fellow passengers regarding the countryside having drawn blanks, I was tempted to believe that they were all city dwellers, until, approaching Coff's Harbour, I happened to pass a remark regarding the banana plantations which could just be seen in the gathering dusk. If there is anything I do not know now about banana business, it is only because of a bad memory!

There is no view of the ocean in the 543 miles I saw in daylight of the journey between Brisbane and Sydney, though it is visible in daylight at Coff's Harbour. South of that point, sandhills close to the line indicate the nearness of the sea. Passengers have the evening meal at Coff's Harbour, where 26 minutes are allowed for this and engine requirements.

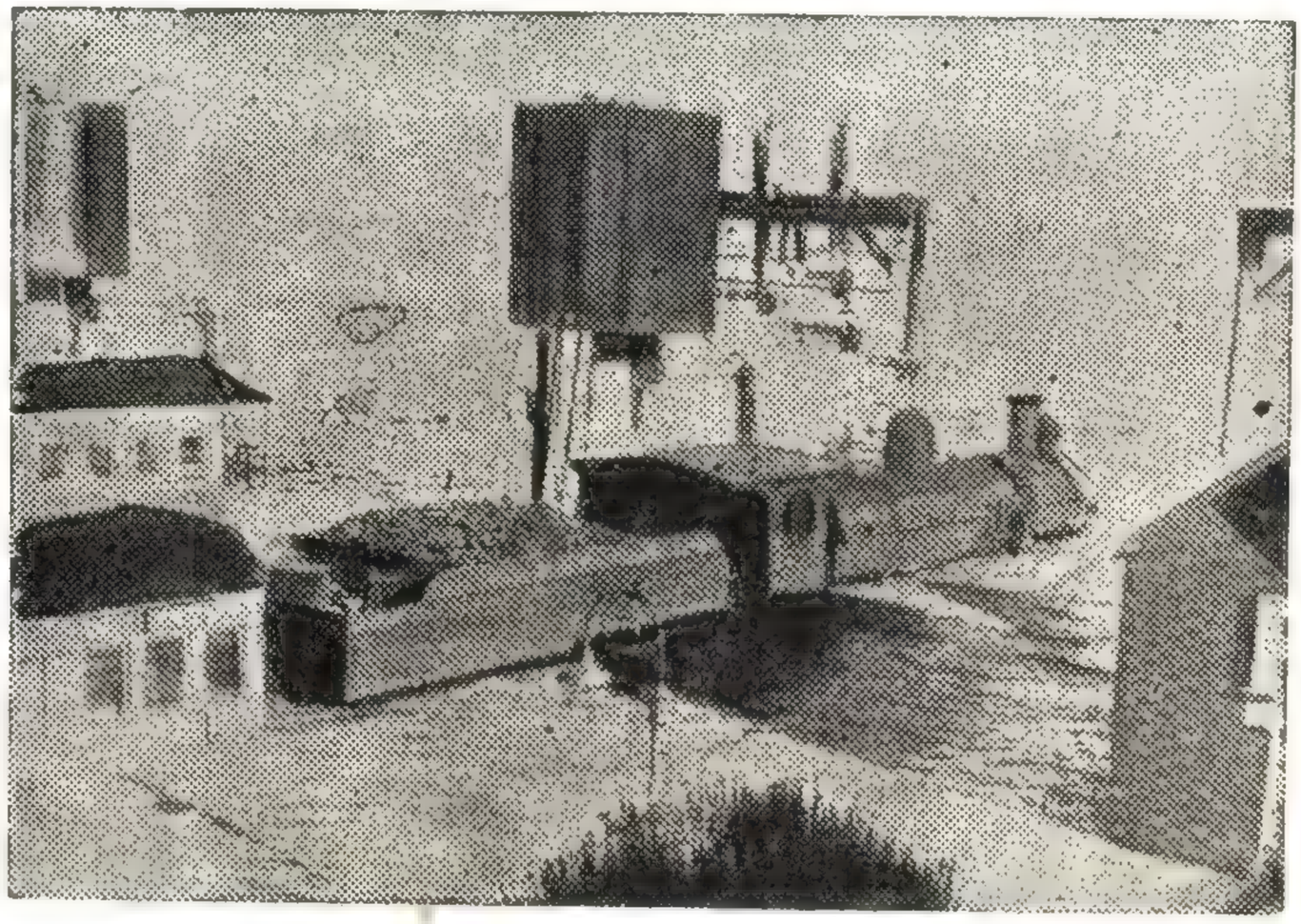
At Macksville, 34 miles further on, the train was three minutes early, and was held there awaiting clearance of an Up Goods train from the section ahead. The only other incident was a slow approach to Kempsey, owing to permanent way slacks, with a five-minute late arrival.

I stayed the night here, and continued on to Sydney next day on the 6.15 a.m., with No. 3222 at the head of a train-set of five centre-aisle cars and a composite HFL. The journey commenced by setting back to run into No. 2 Road, to cross the Down Brisbane Limited, The Limited was late, and delayed the getaway until 6.40—15 minutes behind the work book time.

Running for the first mile over new formation and the Macleay River Bridge (see illustration last month) was very cauticus, and at Wauchope, just over an hour later, the deficiency had increased to 22 minutes. At this point, a couple of ladies entered the carriage to help another with her luggage, and the train started before they could get out again. This was a welcome opportunity, as I had not previously pulled a communication cord! I did this, after failing to attract the attention of the driver, and just in time, as the ladies were showing signs of panic.

The engine took water at Kendall, 44 miles from Kempsey, and at John's River, 9½ miles further on, I noticed one of the few cases I saw in New South Wales of engine crews changing over. It was turning out a hot day—6 a.m., temperature at Kempsey was 65 degrees—and I also noticed for the first time the fireman carrying a portable seat which could be attached to the tender handrail so that he could sit back in the draught of air above the footplate, in preference to the cabin seat close to the firebox.

The time lag had been reduced to nine minutes on arrival at Taree, where the engine was replaced by No. 3242, which came on with two extra cars. Recovery continued, and the generous allowance for the section



Stopping for water at Maitland, N.S.W., this 32 class 4-6-0 got rather more than was intended, in the June, 1949, floods (see comment by Mr. Einsiedel on this page). Reproduced by courtesy Salvation Army "War Cry".

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to Gloucester was sufficient to enable arrival there to take on water on time at 11.29 a.m. The train was four minutes early into Dungog, at 1.15 p.m., again to take water, and also to cross the 8.12 a.m. Down Passenger to Kempsey from Sydney. With the load in hand, the schedule was proving easy for the engine as, in spite of a four-minute wait to cross a Down Goods at Patterson, and a 2½ minute signal stop outside Maitland, the arrival there was six minutes early.

The stop of 13 minutes there gave ample time to inspect the June, 1949, floodwater marks on the station buildings—they were over seven feet above platform level. Temperature here was 90 degrees and at Waratah, during a stop of five minutes, the driver had to send the fireman to pull some wires before he could release the brakes.

Items worth mentioning regarding the North Coast line are: (1) 285 miles without a branch line between the junction outside Maitland and Glenreagh, between Coff's Harbour and South Grafton. (This beats the 259 miles from Roto to Broken Hill, as the longest in the State.) (2) The 149 miles south from North Coff's Harbour to Wingham, in which only two stations have an altitude higher than 63 feet at Wingham. Rail level goes up beyond 100 feet five times, between stations, but in no case does it exceed 150 feet.

Engines were changed again at Broadmeadow, No. 3225 continuing on to Sydney, water being taken at Gosford; the assistance of No. 5461 (53 class 2-8-0) as a banker was necessary on the run from Hawkesbury River to Cowan. Seven minutes were picked up on the schedule from Hawkesbury River to Sydney, to arrive there only one minute late, at 6.56 p.m.

Missed Opportunity.

I realised some time later that I had made a mistake in not including the Murwillumbah branch instead of making a direct run from South Brisbane. A short wait at Casino to transfer to the North Coast Mail and, in addition to seeing 80 miles of interesting country to the coastal town, the Coff's Harbour-Kempsey section would have been passed in daylight, on the Up Mail next day.

OFF AGAIN

Northern Tablelands and the North-West

Next came a three-day trip to Armidale and Moree, and return, involving just over 12 hours of travel each day, followed by a welcome rest on the Sunday. A start was made behind 3812 on the "Northern Tablelands Express" with seven cars and an EHO van—266 tons. A minute late leaving at 7.56 a.m., signal checks each side of Strathfield mattered little to the 38 which, when on the Newcastle "Flyer", encounters timings minutes faster on all sections, with a much greater load; Hornsby was reached a minute early. The stop here was for nearly five minutes, most of it awaiting a passenger from a North Shore "spark". Further delay came at a signal just short of the first tunnel down the Cowan Bank. Apparently there was circuit trouble, the driving having to obtain telephone authority to proceed; the stop cost four minutes, and all this was repeated two minutes later at the next "stick". Hawkesbury River was passed 11 minutes late, with gradual reductions to 9½ at Woy Woy, 6 at Gosford, 5 at Wyong, 4½ at Morriset, and 2 at Fassifern. After a signal stop at Broadmeadow, costing a minute, the arrival there was a fraction of a minute late. The usual engine change brought 3511 in front. This place has the largest engine depot in the State, outside Sydney; all through trains, except those to or from Newcastle, change engines there.

From Broadmeadow to Werris Creek, over generally rising country, there did not appear to be any slackness about the schedule, no recovery time being allowed. The eight stops occupied slightly less than booked time, but seven minutes were lost in running. Water was taken at Muswellbrook and Murrurundi. After crossing the Hunter River just past Singleton, there is a climb of 270 feet in four miles with several easements from the 1 in 40 grades to compensate for a quarter mile of 1 in 33.

Passing Wingen, at the foot of the grade up to Murulla where the Up Express was crossed, someone had to tell the story of the station master who went from bad to worse—he was transferred from Wingen to Cryon, out on the Walgett branch.

Murrurundi, nestling in a wide valley at the foot of the south side of the Great Dividing Range, which here runs almost east-west, provides banking engines which operate to and from Willow Tree, 15 miles further on, at the foot of the grade on the north side of the range. No. 3511, however, was able to manage the 266 tons up the 400 feet in the last 3¼ miles to Ardg[illegible] tunnel, though speed dropped to just under 12 m.p.h. on the 1 in 40 grade, with the usual curves.

The previous week there had been a washaway nea[illegible] Quipolly, the station before Werris Creek, and th[illegible] day was very hot, with evidence of thunderstorms to the south-west, prompting one railwayman at Werris Creek to hope that he "could get back before the washaways!" In this atmosphere, the engine and two cars came off, No. 3525 taking over, to leave seven minutes late, at 3.59 p.m., three minutes having been cut from the 14 allowed for the stop. In the absen[illegible] of recovery time, no leeway was made up during th[illegible] rest of the journey, except on the long uphill sections. These were offset, however, by stops for water [illegible] Kotingal and Woolbrook, for which insufficient allow[illegible] ance appears to have been made. Arrival at Armidale (369 miles) was eight minutes late, at 7.38 p.m.

After four miles of steady climbing from Werris Creek, easy conditions prevail through Tamworth (28[illegible] miles) as far as the short Limbri tunnel, after wh[illegible] the western slopes of the Dividing Range are mounted on almost continuous curvature, with a climb of 1,470 feet in 14 miles to just before Woolbrook (317½ miles). The tablelands are really entered here, although rising grades continue for about another six miles, through Walcha Road. The country then becomes undulating, and at times it is not easy to kno[illegible] on which side of the watershed one is. There is a drop down into Armidale, which is on the east side of the range, and in the Macleay River area.

(To be continued)

DIESEL TROUBLE ON THE S.A.R.

"Overland" Still Steam-hauled At Times

Commenting on our January cover "The Overland—A Memory", a South Australian correspondent reports that for several days in late January and early Febru[illegible]ary the "Overland Express" was steam-hauled betwee[illegible] Adelaide and Tailem Bend. Diesel-electric locomoti[illegible] No. 901 had burnt out two traction motors, and w[illegible] worked back to Adelaide in undignified manner at the head of four end-platform suburban cars. Although confirmation is not presently available, our correspondent understands that the "Overland" is occasionally worked in the Up direction from Tailem Bend by a 500 class steam locomotive, the diesel which had brought the Down train from Adelaide returning [illegible] the head of a freight.

Further information on this interesting situation would be welcomed.

Diesel Electric Locomotives

Data on Clyde—G.E. Models

Operating Economies

Operating costs will naturally vary considerably on individual railway systems, depending on fuel costs, degree of utilisation of motive power practised and overall efficiencies attained in assembling and despatching trains, maintenance and service facilities and tracts. For instance, due to standardisation, manpower requirements for maintaining and servicing diesel locomotives are greatly reduced. Furthermore, where complete dieselisation is attained, considerable savings are possible in establishment costs as costly coal fuelling depots and facilities, together with water installations, can be entirely eliminated, with comparatively little expenditure on modern facilities to maintain diesel power.

The Clyde-G.M. 1,500 h.p. Diesel Electric Locomotive now under manufacture at these works can carry 1,500 gallons of fuel; operate under normal conditions on one gallon fuel per locomotive mile, and can accordingly haul goods over a total distance of 1,400 miles without refuelling. This substantially reduces running times between terminals, and due to greater tractive effort can handle heavier trains faster than steam locomotives of comparable H.P. Consequently, less diesel locomotives are required than steam locomotives handling the same quantity of goods which offers substantial savings both in investment and operating costs.

Summarising, the main advantages claimed for the diesel electric over steam are that it is possible to achieve:—

(a) Faster operating schedules.
(b) Greater hauling capacity.
(c) Up to 50% decrease in operating costs.
(d) Up to 50% decrease in maintenance costs.
(e) Higher availability for work.
(f) Freedom from costly supporting services, including coal depots, ash dumping, water treatment and storage, boiler flushing, etc.
(g) Less wear on tracks due to elimination of hammer blows inherent in steam locomotives.
(h) Contraction in back shop facilities due to far longer periods between major overhauls, also less time and plant required in repairs due to standardisation and interchangeability of parts referred to above.
(i) Unaffected by climatic conditions.
(j) Instantaneous availability for work by pressing the starter button and closing down engine when standing by.

LOCOMOTIVE EQUIPMENT

Transition

On main line Clyde-G.M. locomotives automatic traction motor transition is employed. This device permits smooth acceleration through the locomotive's full speed range, at the same time positively regulating the power input to the traction motors to ensure that the full horsepower available can be utilised at all speeds and loads. Whereas the majority of main line freight and passenger services in U.S.A. employ 4 transition stages, namely:

1. Series parallel;
2. Series parallel shunt;
3. Parallel;
4. Parallel shunt;

attained by variations in the traction motor connections, a recent development has been perfected by General Motors in their general purpose locomotive (G.P.7) which has been designed, as its name implies, for general service on main and branch lines and for shunting, wherein the system has been greatly simplified by adopting a single transition between series parallel and parallel, without in any way sacrificing flexibility of control within the same speed range. This latest development has been adopted for Clyde-G.M. locomotives which are operating in Australia. This form of transition permits far greater continuous tractive effort at low speeds than is attainable on locomotives employing field weakening devices only, as constitutes present European practice.

Load Regulator

An ingenious device known as a load regulator is installed on all Clyde-G.M. locomotives to prevent overloading of the engine. The load regulator vane motor is actuated by oil pressure through a governor pilot valve which operates automatically to control the load on the main generator for a given throttle position. By this means, constant engine speed and power output is automatically maintained for each throttle position.

Power Supply

The main generator, of 1,250 K.W. capacity, supplying D.C. power to the traction motors, and the alternator, of 50 K.V.A. capacity, supplying power to the cooling fans and traction motor blowers, comprise an integral unit housed in a common stator frame, directly coupled to the engine crankshaft. The alternating current supply has been introduced on account of its simplicity and absence of brush gear, which offers complete reliability with low maintenance cost. An Auxiliary D.C. generator of 74 V. constant output and 10 K.W. capacity is directly mounted on the main generator and driven through gearing to supply current for lighting, control equipment and battery charging.

Speed Variations

The speed range of any Clyde-G.M. locomotive can be varied to suit actual service requirements, by altering the gear ratio between the pinion mounted on the traction motor armature shaft and the gear wheel fitted to the driving axles. This is clearly illustrated in the following tables:—

Gear Ratio	62.15	58.19	56.21
Ratio	4,13	3.05	2.66
M.P.H., Min. (continuous)	11	15.5	2.66 15.5 18
M.P.H., Max.	65	89	102
Max. Continuous Tractive Effort ..	52,500	30,000	25,500

On a general purpose locomotive the gear ratio would be selected according to the type of service predominating, and the tractive effort obtainable from the corresponding gear ratios are indicated above, wherein

John C. Beckett

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Victoria.

XW 2834

Column 1—indicates a reasonable selection for yard shunting, 2—goods, and 3—passenger services.

Filtered Air

Due to abnormal operating conditions obtaining on the Commonwealth Railways, Clyde-G.M. locomotives are fitted with special equipment to supply clean filtered air into the locomotive for engine and traction motor blowers, at the same time being drawn into the interior above atmospheric temperature, providing an effective seal against dust penetration into the operating mechanisms.

"TRANS" MAKES A PROFIT

The Commissioner for Railways, Commonwealth of Australia (Mr. Hannaberry), reports that, for the first time since 1917, revenue on the East-West Transcontinental line has exceeded expenses.

Built primarily for strategic and political reasons, this 4 ft. 8½ in. line runs from Port Pirie, S.A., westwards to Kalgoorlie, W.A. Freight traffic other than for locomotive and general railway purposes, has always been light. Traffic is principally in the westerly direction, with little return traffic, and there is no local traffic over most of the line.

The Commissioner attributes the favourable result to the growing use of diesel-electric locomotives, and the introduction of Budd railcars for local traffic at the eastern end (see previous issues of this magazine).

RAILCAR TRAFFIC GROWS

Popularity of the Budd railcars between Port Pirie, Port Augusta, and Pimba (railhead for the Long Range Weapons project) has necessitated the provision of trailer cars. Two large Brill "gas-electric" railmotors, with the motors removed, were obtained from the Reading R.R., U.S.A., and are now in service. The additional space for baggage is particularly useful.

South Australian Gauge Widening.

A Mt. Gambier, S.A., correspondent advises that, on a recent visit to the Penola District, he observed that a third rail had been laid, for 5 ft. 3 in. gauge trains, along the existing 3 ft. 6 in. section from Narracoorte to within a quarter of a mile of Penola. The Coonawarra yard has not yet been relaid, but otherwise the work of widening the gauge from Narracoorte to Mt. Gambier (64 miles) was half completed.

Railway Banknote Robbery

A consignment of £5 notes, totalling £1,000, being sent from a Launceston, Tasmania, bank to its branch at St. Mary's was stolen from a mailbag in the guard's van of a freight train on 22/4/52. Robberies of this kind are rare on Australian railways.

QUEENSLAND RAILWAYS

New Diesels — Big Works Programme

U.K., U.S.A., AUSTRALIA SHARE ORDERS

81 drivers will be required for the first ten American diesel-electric locomotives to be delivered between August and October. The ten diesel-electrics, from England, will probably be delayed until the end of the year because of the shortage of steel in Britain. Special plant, to be installed at Mayne, is being ordered from England at a cost of £4,075, to treat water (demineralised) for the new diesel-electric loco's.

An order has recently been placed with Walkers Ltd. (Maryborough) and the A.G.E. Co. Ltd. for diesel-electric loco's. at a cost of £630,000 (including spares). These new loco's. will have an axle load of 10 tons and have a performance slightly higher than the C17 goods engines. They will be used on branch lines and delivery is expected in about 30 months.

In a long-range plan of the Railways Department all passenger and goods trains entering the metropolitan area will be hauled by electric or diesel locos. Consequently, it has been decided to retain Mayne as the steam depot and to make provision for a depot at Northgate for electric rolling stock, air-conditioned trains, and diesel-electric loco's.

Brisbane Electrification.

A new railway bridge, as part of the electrification, is being considered by the department. The planned site is about 330 yards upstream from the Grey Street Bridge, and would be a direct link between South Brisbane and Roma Street stations.

Work on the Brisbane electrification is at present on schedule. Station platforms have been raised at Wacol, Booval, Redbank and Grovely. Widening of the line between Newmarket and Mitchellton has been practically completed. Heavier rails have been laid between

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TRAVELLING POST OFFICE

Until they were discontinued, in 1932, mobile sorting vans, known as Travelling Post Offices, were in regular use on several main lines of the Victorian Railways. Largest of several types of car in use was the BDSE (2nd Class Passenger/Bulk Mail/Sorting/E Class), one of which is illustrated below, by courtesy of the V.R. Publicity Section.

Ten of these large cars were built and, on the cessation of the service, they were converted either to standard BE (2nd Class Passenger) or BCE (2nd Class Passenger/Guard and Luggage Van) cars.

Travelling Post Offices continue to be used widely on British and American railways, and they are to be found also on the New South Wales Railways.

Alderley and Enoggera, Northgate and Sandgate. The remaining section of the Yerongpilly-Kuraby duplication (Yerongpilly-Rocklea) is almost complete. Refuge sidings are under construction, or completed, at Petrie, Zillmere, and Goodna. Preparatory earth work is complete between Corinda and Chelmer, earth work is well in hand between Indooroopilly and Milton. Electrification is planned to commence in January, 1957. The electric trains will accelerate to 10 m.p.h. in 7 seconds and will be faster than the Sydney and Melbourne electrics. The successful tender will be known by January, 1954.

The new £400,000 railway deviation near Mt. Morgan will be officially opened by Mr. Duggan on April 19. The 6½ mile deviation between Moongan and Kabra eliminates the old track railway between Moonmera and Moongan. The old track could handle maximum loads of only 100 tons. The new route would be able to carry 650 ton loads down and 275 ton loads up the range.

The erection of a new high level railway bridge over the Haughton River will be started in July, 1952, and would be completed about the end of 1955.

ELECTRIC RAILWAY ROUND-UP

New South Wales.

Tunnels for the Eastern Suburbs Railway (Sydney) have been completed between Martin Place and Woolloomooloo, and the King's Cross station excavations have been started.

Work on the electrification of the Main Western line beyond Parramatta has been commenced.

Suburban electric service between Newcastle and Toronto will be introduced with the electrification of the Northern line, to follow completion of the Western Line.

Queensland.

In connection with the electrification of the Brisbane suburban lines, it is planned to construct a new, direct link between South Brisbane and Roma Street stations, via a new bridge across the Brisbane River.

Victoria.

Earthworks for the duplication of the Camberwell-Ashburton section of the Alamein line are well advanced. Spoil is being used to widen embankments between Glenferrie and Camberwell with a view to future quadruplication between Richmond and Camberwell.

Track laying will commence shortly on the first of the two new tracks between Richmond and South Yarra.

(Full details of the foregoing works, and other items of electric railway interest will be found in "Electric Traction".)

REGULATION STRIKE AT SYDNEY

A "regulation strike", during which men worked strictly according to the rule book, delayed railway traffic up to 2½ hours on 10/4/52. Men at Sydney Yard struck, allegedly because of the activities of an inspector said to be reporting them for trivial breaches.

V.R. VETERAN.

Several enquiries have been received as to the future of the old AEC rail motor which has been standing outside Jolimont Workshops, Melbourne. The answer is best summed up in the words of a V.R. man whom we asked about it. "Oh, that!" he said, "The boys have their lunch in it!"

N.S.W.R. ALCO-GE DIESELS
Detailed Particulars

By courtesy of the New South Wales Railways, we publish full operating details of the new Alco-GE diesel-electric locomotives introduced last year. Pictures and other data have already appeared in our pages.

The two Diesel-electric locomotives which commenced running in goods service between Enfield and Broadmeadow on 30th November, 1951, are the first of twenty being supplied by the American Locomotive Company from their Canadian Works at Montreal, the electrical equipment being made by the Canadian General Electric Company at Peterborough.

Although not streamlined, the equipment of these locomotives is practically the same as that in the streamliners, the only major difference being that in the design, good visibility is given in all directions which renders them suitable for shunting as well as main line service.

The electrical controls are mounted between the generator compartment and the driving cab and are accessible from both sides. The various control relays are mounted on panels, fitted with aluminium covers, with all leads being brought to plug sockets. By undoing four holding screws and withdrawing the plug it is possible to replace a complete relay panel. This point is clearly illustrated in the top of the photograph of the control equipment.

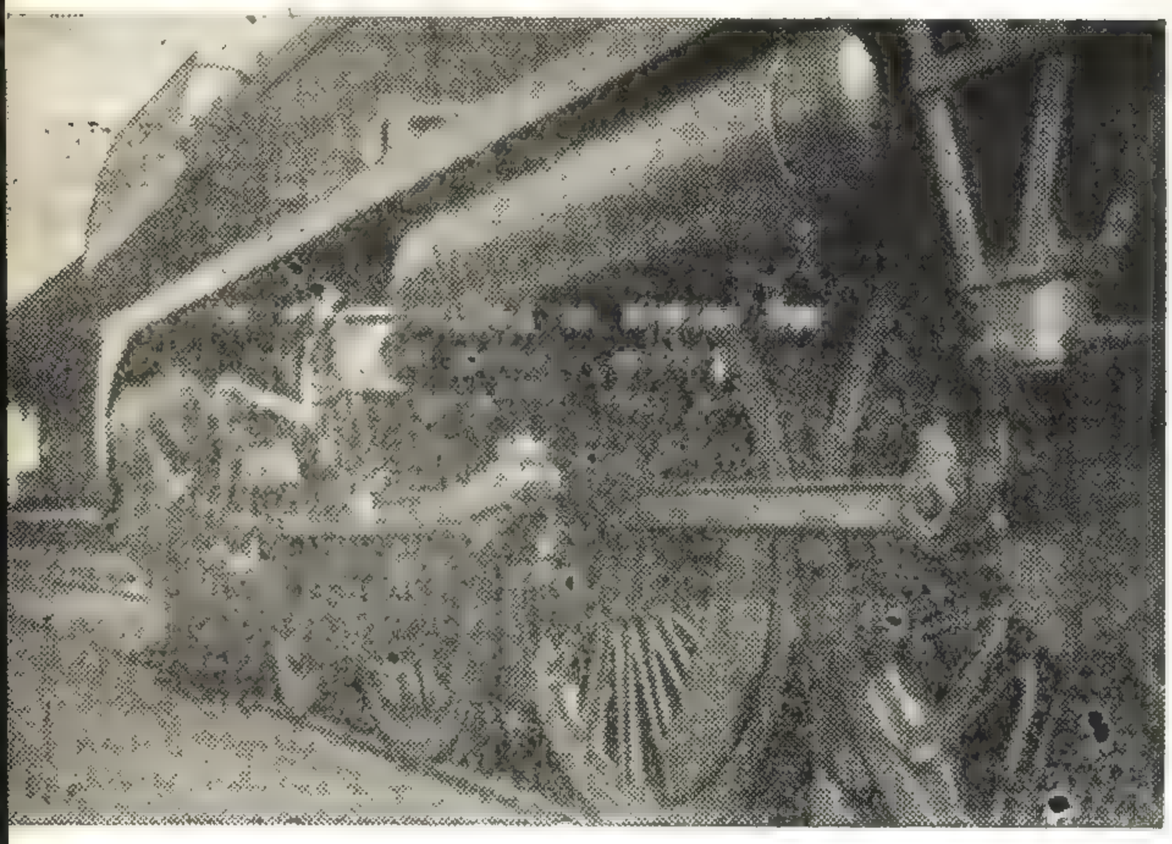
The locomotive body is mounted on two three-axle bogies which are of the fully equalised type giving the locomotive riding quality comparable with that of modern passenger rolling stock. The bogie centres are only 30 feet apart enabling the locomotives to negotiate curves having a minimum radius of 150 feet.

Power Unit

The power unit is an Alco 12 cylinder V type, Diesel engine model, and is a four cycle engine, having a 9" bore and 10½" stroke, turbo-supercharged, with two intake and two exhaust valves per cylinder, water cooled cylinder liners and head, forged steel connecting rods, 7 bearing crankshaft, welded base and cylinder block. This Diesel engine has been designed specifically for traction purposes and with the use of a GE. turbo-supercharger it has been possible to design a very reliable lightweight engine. The rated H.P. of the engine is 1,750 or 1,600 H.P. at the main generator and the speed range is 350 to 1,000 r.p.m. Engine starting is effected by using the main generator as a motor. The generator is wound with a special starting winding and current is supplied by the main batteries. Gear driven centrifugal pumps circulate water through the engines, radiators, and lubricating oil filters. The engine temperature is maintained at a constant value by controlling the air flow through the radiators by means of modulated shutters and a variable speed radiator fan which is driven through an eddy current clutch. Thus the operation of this cooling system is entirely automatic and is fully interlocked with the other controls.

The two stage, three cylinder, air cooled, air compressor which supplies air to the brake system is direct driven by the Diesel engine. The displacement at idling speed (350 r.p.m.) is 78.7 C.F.M. and at full speed (1000 r.p.m.) 225 C.F.M. Two main reservoirs below the under frame have a total capacity of 60,650 cu. inches. Air brakes are Westinghouse type 6-SL. The main generator is a GE. type GT-581 directly connected to the Diesel engine. The exciter is mounted on the end of the main generator and is an amplidyne machine designed for use with the power plant regulator. There is also an

New-Type Driving Wheels



U-section spokes distinguish the SCOA-P driving wheels used on the new R class 4-6-4's of the Victorian Railways. This view of the wheels and motions of No. 735 is the work of reader L. F. Holmes, of Seymour, Vic.

auxiliary generator gear driven from the main generator shaft. It supplies power for the battery charging, lighting and control circuits and operates at constant voltage under control of a regulator.

The traction motors are four pole, direct current machines, designed for operation with full or shunted fields. The armatures are equipped with roller bearings. Silicon insulating materials have been used in the windings giving a continuous current rating of 1,085 amps. The traction motors are nose suspended, there being two motors to each bogie, and are force-ventilated by means of flexible connections between the blower air duct on the under frame and the motor frames. A traction motor blower is supplied for each bogie. The motors are geared for a maximum speed of 75 miles per hour, the gear ratio being 65:18.

The storage battery is a 32 cell, 426 ampere hour lead acid type. It is installed in two battery boxes, one on either side at the rear of the operator's cab, above the underframe, there are 16 cells in each box.

Control Equipment.

The locomotives are designed for multiple unit operation and as many as four units can be coupled together and controlled by one crew only.

The engine control stand is at the right of the operator's seat and contains throttle, selector handle, reverser handle, air brake valves, and circuit-breaker type switches for generator fields, fuel transfer pump and control circuits, headlight switches, light switches, air brake gauges, speed and transition indicator, load meter, and wheel slip indicating lamp as well as signal lights for low oil pressure, high engine water temperature and ground relays.

Reversers and line contactors are electro-pneumatically operated. All other contactors are operated magnetically.

The contactor compartment which contains the electrical control equipment is, as previously mentioned, located at the rear of the driving compartment. The apparatus is accessible through doors in the wall of the operating cab and through panels in the front portion. Louvres allow for adequate ventilation. Switches and meters are contained in the panel mounted on the compartment wall at the rear of the operating cab where they are accessible to the driver in the cab.

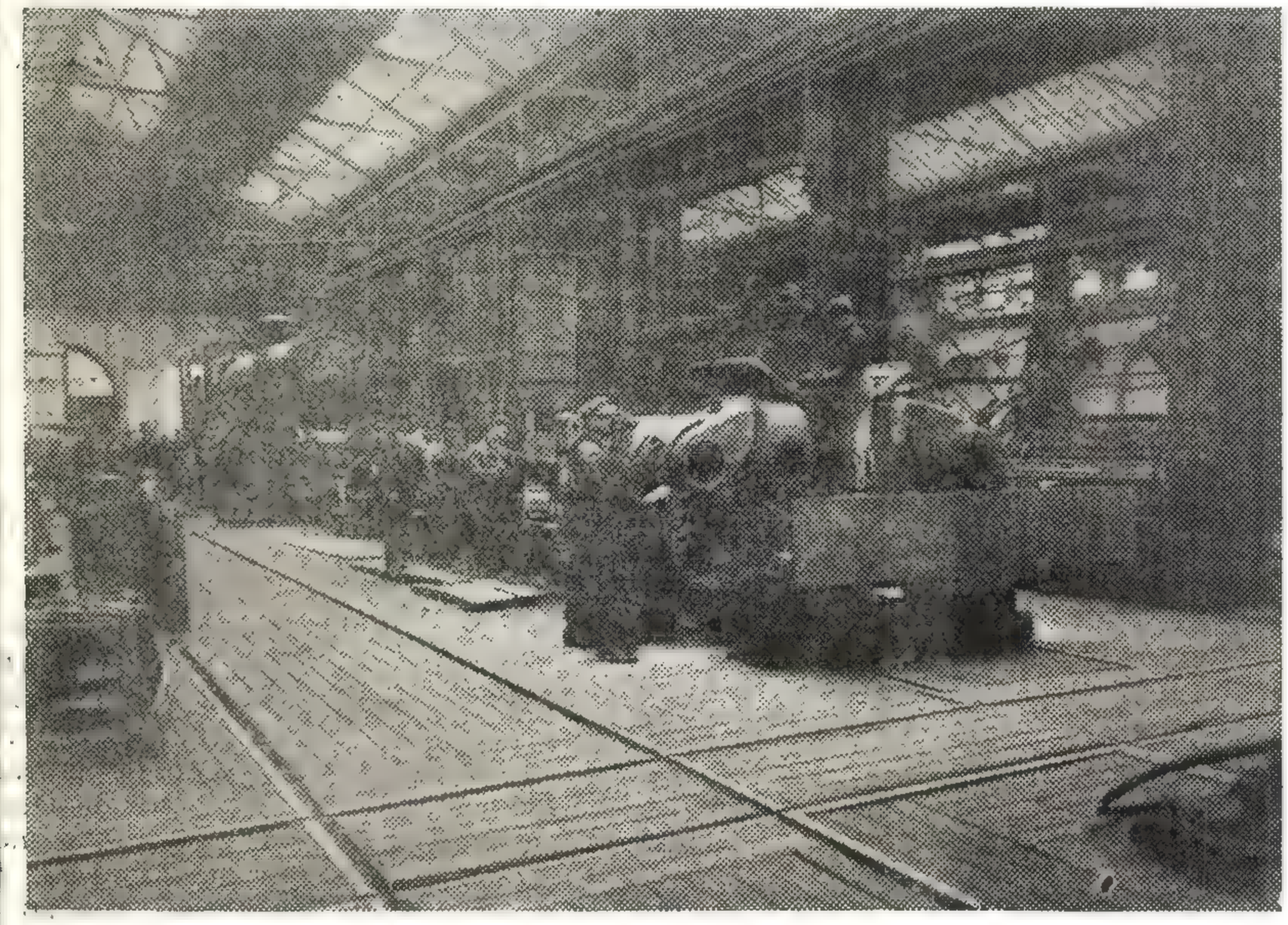
Manual, low voltage switches, of the circuit breaker type with resetting features, are used on auxiliary circuits wherever overload protection is required.

Transition is manually controlled, both forward and backwards, by a selector handle and the four traction motors can be connected as follows:—

Series parallel full field, series parallel shunt field, parallel full field and parallel shuntfield.

Excitation System and Power Plant Regulating System

The power plant regulating system modulates the Diesel engine loading by controlling fuel to the Diesel engine and adjusting generator demand. It holds con-



BIRTHPLACE OF MOTIVE POWER.

N. class 2-8-2's under construction in the erecting shop at the Newport Workshops of the Victorian Railways. Shortages of materials and manpower, particularly the latter, have reduced this once-great producer to turning out an occasional locomotive when work can be done in between normal maintenance and repairs. Newport-built N's of the present programme are numbered from 430 upwards.

Only other locomotives on order from Newport are two additional H class 4-8-4's; many parts for these engines are in stock, but it now seems unlikely that they will ever be built.

THE LITTLE OLD ENGINE . . .

When this photograph was made, in February, 1941, class 0-6-0 No. 94 was the oldest locomotive in service on the Victorian Railways. One other engine of this class shunted Newport Power Station sidings until displaced by S.E.C. diesel-electrics recently.

(Illustration courtesy "Truck & Bus Transportation")

. . . AND THE BIG NEW ONE.

Reader Guy Bakewell, of Kew, Vic., snapped H class 4-8-4 No. 220 on the same day as No. 94. Both were on display at Spencer Street Station, Melbourne, to demonstrate growth of V.R. power. "Heavy Harry" (a name much overworked by the Melbourne press) was then the newest V.R. loco, still is the largest.

stant any pre-set engine speed by limiting engine torque and adjusting generator demand to the ability of the engine to deliver power at any moment and for any set speed. The brain of this power plant regulating system is the G.E. Governor. The governor is a hydraulic electric device which controls engine speed and engine load by matching generator demand with the engine ability, and controls engine torque at all engine speeds to the fuel limit at each throttle position. The position of the throttle handle governs the stop position for the fuel rack and also sets up electrical connections for a predetermined speed of the Diesel engine. The governor is connected to the individual fuel pump racks by two pump control shafts and a system of control linkages.

The electrical load is controlled by means of the amplidyne exciter. The governor has a load control rheostat which reduces the current in the control field

(continued overleaf)

NEW STANDARD-GAUGE LINE

Commonwealth Railways Calls Tenders

Some weeks ago, the Commonwealth Railways called tenders for "Construction of Bridge Piers, Abutments and Minor Waterways in Concrete of the Brachina to Leigh Creek North Coalfield Railway, South Australia." This is the new standard gauge line designed primarily to carry coal from the Leigh Creek field to the new power stations at Port Augusta. Ultimately it is intended to be extended beyond Leigh Creek over the route of the existing 3 ft. 6 in. line to Alice Springs. South Australian interests hope to see it extended over the long-planned North-South Trans-Continental route to Darwin.

Mention of Brachina (near Port Augusta) suggests that the objection voiced in certain quarters to the by-passing of Quorn, S.A., in favour of an easier route than that followed by the 3 ft. 6 in. line has either been overcome or over-ruled. Quorn is at present the headquarters of narrow gauge operation, and the town expects to suffer through the proposed new route.

ACCIDENTS ON THE V.R.

A2's Involved

A fatal head-on collision occurred on the Victorian Railways on the evening of Saturday, 12th April, at Moriac, 14 miles west of Geelong. A Down passenger train from Melbourne collided with an Up train in the platform road. The Up train was about to set back preparatory to running into No. 2 road. The leading car of the Up train, an APL (1st class tourist car) was telescoped by the tender, a woman passenger being killed. Engines involved were Nos. 949 and 969, both A2 class 4-6-0's.

An A2, No. 839, was also involved in a collision with a road grader at a level crossing on a private siding near Sunshine a few days later. The loco was proceeding tender-first, and the impact of the collision derailed the tender, the locomotive following.

R CLASS PICTURES

Gratifying Response

The editor wishes to thank readers who sent in "action" pictures of the new R class 4-6-4's of the Victorian Railways.

One of these pictures will appear on next month's front cover, and others will be used as opportunity serves.

The prompt response to our request is particularly gratifying.

BOOK REVIEW

THE COMPLETE BOOK OF MODEL RAILWAYS

By Louis H. Hertz

(New York, Simmons-Boardman)

All that really need be said about this book is that its title is no exaggeration. We have read many so-called "complete" books of this-and-that from which one might devise a new parlour game of listing the more glaring omissions. Mr. Hertz, who is more than well-known in the American model railway world, seems to have done the impossible. If we mention that he has covered every form of propulsion from dry ice to live steam, every gauge from 1 cm. to 19 in., every period from 1812 to the present day, every problem from layout planning to methods of control, and every approach from cheap tinplate to super-scale, readers may have some idea of the wealth of information contained in this book. By covering we do not

(Continued on page 14)

of the amplidyne whenever the generator overloads the diesel engine and slows down below the rated speed for a given throttle setting.

To prevent an excess of current passing through the traction motors a load current limit is incorporated which again controls the output of amplidyne exciter thus reducing the generator output should the load current become excessive.

Regulation is extremely sensitive and the necessary balancing is effected instantaneously. The entire system is out of the hands of the operator and is so interlocked that there is no possibility whatsoever of the Diesel engine being overloaded.

Wheel Slip Control.

Another important feature of the control system is the improved method of handling power removal and re-application for wheel slip correction.

Fundamentally the desired action required to arrest and recover from a wheel slip involves—

(a) Quick removal of power.

(b) Smooth, easy re-application of tractive effort so as not to re-establish the slip.

(c) Execution of these actions in a minimum time.

The scheme making additional use of the current limit feature of the Alco-GE control system accomcurrent is instantly reduced and when the wheel slip relay drops out, the load current is allowed to restore to its former value at a smooth controlled rate. This is achieved by means of a time constant circuit. During this action neither power switching nor engine speed have been disturbed and performance is back to normal with a minimum loss of time and pulling power.

An additional benefit is realised from the action of this equipment in that it adds to the smoothness of transition.

In Freight Service

Known as the 40 class, the new locomotives are numbered 4001-4020, and have been used principally in intensive freight service between Enfield and Broadmeadow over the "Short North" line. They are to be seen also on other main lines, and will shortly be tried in passenger service.

On the Illawarra line, the 40's have been hauling loads of 900 tons to Thirroul, returning light.

GENERAL CHARACTERISTICS

Railway	N.S.W.G.R.
Gauge	4'-8½".
Class	N.S.W.G.R. 40 class.
Wheel classification	A1A-A1A.
Builder	Montreal Locomotive Works.
Diesel Engine	One-Vee type, 12 cylinder, 4 cycle.
Horse Power to Generator	1600.
Bore x Stroke	9" x 10½".
Tractive Effort, Max.	50,000 lb.
Cont.	46,000 lb. @ 11 m.p.h.
Bogie Centres	30 ft.
Wheel dia.	40".
Height (Max.)	14 ft.
Width (Max.)	9 ft. 10 ins.
Length across buffers	56 ft. 7¼ ins.
Weight—tons	111½ tons.
Axle loading—tons	18.5.
Max. speed m.p.h.	75.
Brakes	Westinghouse 6-SL.
Supplies—	
Fuel oil (Imp. galls.)	1,200
Lub. oil (Imp. galls.)	167.
Cooling water (imp. galls.)	208.

MODEL RAILWAYS

STEAM — CLOCKWORK — ELECTRIC

Small but powerful is this diminutive 0-4-0 switch of the 6 in. gauge Hale's Creek Railroad. Two other locomotives, a Pacific, and a 4-8-2, have been illustrated previously in this magazine. (Photo. lent by Ernie Dean, well-known Melbourne model railroader.)

MODELLING IN WOOD AND CARDBOARD

By Cliff Richardson.

This is the second of a series of articles explaining the uses of wood and cardboard in model railroading and has been adapted from the "Journal" of the Australian Model Railway Association.

Model railroaders in this country, as elsewhere, sometimes begin the hard way, by tackling a locomotive as their first construction project. More often they prefer to start with the commonest of rolling stock—an 8-wheeled boxcar for those who follow American prototype, a 4-wheeled open wagon for the others. Curiously enough, the much larger boxcar is probably easier for the beginner to model in wood with reasonable accuracy, for the following reasons.

Firstly, merely because the boxcar makes a considerably bigger model, the newcomer finds his seven thumbs don't get in the way nearly so often as on the less robustly constructed scale model open truck. Then again, unless the newcomer who decides to try wood construction happens to choose a wooden prototype (which is unlikely in his early enthusiasm), he promptly goes astray with out-of-scale-thickness sides and ends. Fixing grabirons (handrails) securely into too-thin wood or flimsy cardboard, and the necessity of finishing off neatly the inside of the model, are other potent sources of fruity language for many a new man.

On the other hand, it does not make much difference whether the full-size boxcar is wood or steel sheathed (this refers to the visible outside covering), and a fellow new to rail modelling often reproduces a strong and fair representation of such a vehicle in wood and cardboard. After all, reduced to its essentials, it is only what its name suggests—an enclosed box, albeit with a fancy lid (roof to you!) and a few trimmings, but with no inside finishing required.

Wood and bristol board can successfully and rigidly imitate steel plating in one plane only, excepting in the case of certain "windowed" cards. Broadly speaking, it is not possible to make the sides of a wooden model of an all-steel prototype open truck thin enough to be in scale and at the same time strong enough to

withstand normal handling and operating abuse. This latter statement regarding strength is applicable to the greatest degree in 0 gauge models. A special exception to this general rule is a model filled with a permanent dummy load such as timber, coal, or bagged wheat (which makes the model, for the purposes of construction), similar to a boxcar.

From the foregoing, you can see that if you wish to build open cars of wood and cardboard, choose a prototype which is itself mainly constructed of wood, at least as far as bodywork is concerned. If, on the other hand, your chosen prototype is of steel plate (almost an invariable rule in modern stock), resign yourself to building the model of metal and soldering it together. If you are building American boxcars, or any of the closed vans or trucks on Australian systems, the material of the prototype doesn't matter very much.

Start With the Floor

The floor is a good starting point on any model. When cutting it to size, allow for the thickness of the wood to be used for sides and ends. Then pencil in a longitudinal centre line on the underside, making sure that it is a centre line, for on its accuracy depends the true centering of couplers and axleguards or bogie kingpins. As running gear and couplers are usually held in place with wood screws, the floor must be sufficiently substantial to hold them tightly in place. Close-grained ¼-in. pine or spruce are fine, but avoid the use of balsa; screws and brads will loosen and pull out of this wood very easily.

Spruce can be purchased in 3 ft. sheets, 3 in. wide, and in various thicknesses from 1/16 in. upwards. It is also available in accurately-cut strips 3 in. long, and in a variety of sizes, such as 1/16 x ⅛ in., ¼ in. x ¼ in., 1/32 in. x ⅛ in., etc. Purchase a selection of these strips and sheets for future use, and save a lot of time and trouble. They can be obtained from several of the advertisers in this magazine.

One firm sells plywood in several thicknesses and accurately cut woods in small sizes and shapes killed especially for model railroad use.

(The A.M.R.A. Buyers' Guide lists such firms from time to time—Ed.)

For sides and ends of wooden-prototype open wagons, thin 3-ply is ideal; 1/16 in. thick is usually O.K. for 0 gauge, and 1/32 in. or 1 mm. for H0.

(To be continued.)

W.A. MODEL DISPLAY

Members of the Western Australian Model Engineering Society recently staged a show at the Cottesloe Civic Centre. Some excellent models were on exhibition, some running on compressed air. The loco. fraternity ran their models, both steam and electric, and gave rides to some 700 children.

Visitors and their models are always welcome. (See Club Notice Board in this issue for particulars.)

S.A.R. STAGE MODEL SHOW

Following the lead given by the New South Wales Railways a year or two ago, the South Australian Railways staged a working model railway exhibit at the Exhibition in Adelaide last month. In 0 gauge, the model stressed the suburban electrification planned for Adelaide, being equipped with overhead wiring and operated by 4-car multiple-unit trains. Considerable attention was paid to miniature buildings and other scenic effects, and a large crowd was attracted.

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TIMETABLE WORKING
Interesting Article

Those who are comparative newcomers to the model railway hobby, as well as the old-timers, will be interested in a series of articles commencing in the March issue of our English contemporary, "The Model Railway News". These articles will deal with timetable working for model railways in a manner calculated to arouse the interest of model railway enthusiasts. Copies of this periodical can be obtained in Melbourne from Meadmore Models, and from other retailers throughout the country.

LETTERS TO THE EDITOR

Readers are invited to forward letters for publication, on any matter of general interest to railway enthusiasts. Noms-de-plume may be used, but full name and address should accompany each letter.

FAN MAIL

J. BUCKINGHAM, Cheltenham, S.A.—Letter and newspaper cuttings most useful, thanks. Glad to hear from you again.

K. J. QUINLAN, Concord West, N.S.W.—Sorry we can't convert you! Am thinking over your suggestions.

M. HAUSTORFER, Ivanhoe, Vic.—Thanks, change noted.

K. FAWCETT, Bondi, N.S.W. — Thanks for cuttings — most interesting.

J. FREER, Balaclava, Vic.—Most interesting; shall try to get block.

QUESTION BOX

Questions on railway matters may be sent to "Question Box," c/- Traction Publications, 29 Seymour Grove, Brighton Beach. S.5. Victoria.

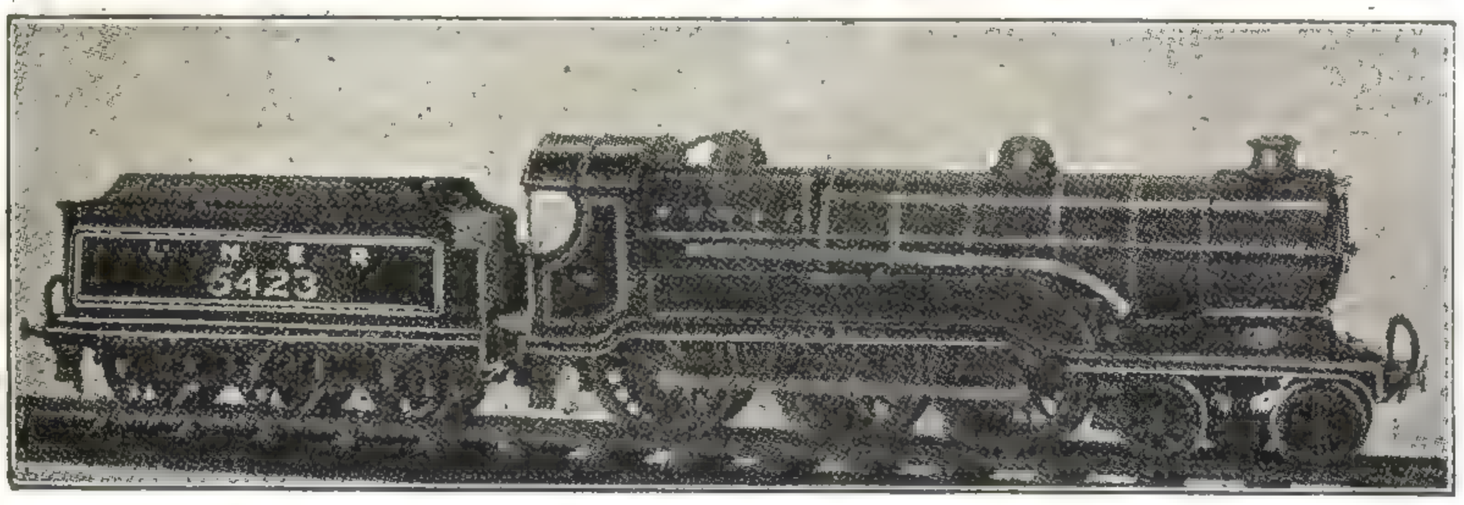
It is regretted that direct correspondence cannot be entertained.

Mr. J. Knowles, of Dalby, Qld., asks: How are the tractive efforts of (a) straight diesel locomotives, (b) diesel-electric locomotives obtained?

ANSWER: For straight diesel locomotives with mechanical transmission the following formula may be used:—

$$\text{Tractive Effort} = \frac{375 \times 90\% \text{ of Rated Engine Horsepower}}{\text{Speed in Miles per Hour}}$$

The resultant figure is at the rim of the wheel, and does not allow for locomotive resistance. For diesel-electric locomotives tractive effort is often given in 3 different ways: (i) at starting, calculated as one-third of the total weight on the driving wheels; (ii) continuous, calculated as for straight diesel, except that 78 per cent. to 82 per cent. of rated horsepower is used, to allow for power loss between engine and generator as well as in traction motor gearing; and (iii) one-hour, representing the maximum overloading which can be taken in that period.



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RAILWAY COMMEMORATIVE STAMPS

Besides the usual Railway components advertised previously, we also stock postage stamps commemorating railways, for the "Ferrophilliac", at the following prices. All sets and commemorative sheets are mint (unused).

3 Denmark, 2/6	3 Austria, 3/6
3 Yugoslavia, 2/6	6 Djibuti, 1/9
4 Yugoslavia, Vol. Fettlers, 8/-	1 Belgian Congo, 1/-
4 Belgium, Eng. Driv., 1/9	1 Japan (Express), 9d.
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The Editor is most grateful for the many letters and news items received, and will acknowledge them as soon as possible. Correspondence is still beyond our capacity to handle at present.

Club Notice Board

Australasian Railway Historical Society
SYDNEY: Railway Institute (Devonshire St.), 2nd Tuesday of each month. Secretary: H. McDonald, 3a Oxford St., Burwood, N.S.W.
MELBOURNE: V.R. Institute, 4th Thursday of each month. Secretary: R. B. McMillan, 21 Evans Court, Toorak, S.E.2, Vic.

Australian Electric Traction Association
MELBOURNE: V.R. Institute, 3rd Friday of each month, at 8 p.m. Secretary: W. G. Mercer, 18 Embling Avenue, Malvern, S.E.4., Vic. SYDNEY: Railway Institute (Devonshire Street), 3rd Thursday of each month, at 8 p.m. Secretary: D. Stewart, 22 Cove Street, Birchgrove, N.S.W.

Adelaide Model Railroaders
meet every Tuesday night at 8.00 p.m., either at the Y.M.C.A., Gawler Place, or members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park, S.A. Phone X 3233.

Australian Model Railway Association
New members welcomed. Write to the Secretary, 105 Blake St., Reservoir, Vic.

Brisbane Model Railway Club
Meetings held on 1st and 3rd Thursday of each month at 36 Goulburn St., Kedron, at 8.00 p.m. Secretary: C. Harrison, 110 Haig St., Stafford, N.3 (to whom all enquiries should be made). Gauges O and HO/OO.

National Model Railroaders' Association (Australian Area)
welcomes new members. Write to The Area Representative, N.M.R.A., 22 Whish Street, Windsor, N.3, Queensland.

Queensland Society of Model Engineers
meets 4th Monday of each month, at 8 p.m. Contact the Secretary, C. H. Garner, "Elsinor," Gray's Rd., Gaythorne, Brisbane, Q.

South Australian Society of Model and Experimental Engineers
holds meetings on the 2nd Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

Sydney Model Railway Society.
meets at 273 Castlereagh Street, Sydney (4th Floor), each Monday evening from 6.30 to 9.30. When Monday is a zoned day, the meeting is held on the following Tuesday. Visitors are welcome. Bruce R. Davies, Hon. Secretary, Pacific Highway, MT. KURING-GAI, N.S.W.

Sydney Society of Model Engineers
Exhibitions every Saturday afternoon at the Exhibition Park, 190 Parramatta Road, Ashfield.
Meetings last Saturday night in each month at 8.00 p.m. in Club House, at above address. Interstate visitors given warm welcome.
Secretary: R. R. Steward, same address.

Victorian Model Railway Society
meets 3rd Wednesday of each month at 8 p.m., at the Model Dockyard, Swanston Street, Melbourne. Visitors welcome. Secretary: I. H. Hooker, 1 Shaftesbury Avenue, MALVERN, S.E.4, Vic.

W.A. Model Engineering Society
meets on the 1st and 3rd Wednesdays of the month at 8.00 p.m. in the Railway Institute, Wellington Street, Perth. Secretary: J. Norman, 54 Woodsome Street, Mt. Lawley, W.A.

IMPROVEMENTS AT MAYFIELD

Mr. Clark advises that, after falling behind somewhat during the very severe summer, maintenance work is being tackled on the Mayfield Lines. In addition, a big regrading job is being undertaken between Stanbridge and Dalmar, with the object of assisting Up trains to make Stanbridge from Griffith without an intermediate winding. It is hoped to alter the grade between Dalmar and Griffith at a later date. The two-car diesel train mentioned in the article published some months ago is now in service and performs well.

NEW MODEL RAILWAY CLUB

An interesting addition to the ranks of model railway clubs in this country is the Glendale Model Railway Club, intended for pupils of Sydney Boys' High School. Having moved from a previous location, the club is engaged in the construction of a new outdoor layout on the stud contact system; there is an indoor terminus. Regular meetings are not being held until the layout is completed, after which visitors will be welcomed.

School clubs have been most successful in England, and the idea might well be adopted more extensively here. Good luck, Glendale!

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mean making a passing reference. There are explanations, plans, diagrams, and pictures to satisfy everyone. The price may seem high, but the book is definitely worth it. Binding and appearance follow the usual standards of good American books.

(336 pp., hard cover, 9½ in. x 6 in. Our copy McGill Agency, 51/-.)

BRITISH TRAINS—PAST AND PRESENT
By O. S. Nock
(B. T. Batsford Ltd., London, New York, Toronto, Sydney.)

Written in Mr. Nock's usual pleasing style, this attractive book deals specifically with locomotives and rolling stock in their development over the 125 years of British railways. Mr. Nock is equally at home with Bury single-drivers or L.M.R. diesel electrics, but his greatest affection is for the "golden age" of British railways—the later Victorian and early Edwardian eras, and this period receives specially thorough treatment. New and amusing anecdotes—often from the notebooks of railwaymen of the time—are recounted of the early days of railway operation. The illustrations, ranging from sepia photographs to reproductions of early prints, and including oil paintings by C. Hamilton Ellis and others, are particularly pleasing, and most were quite new to us.

Although he gives them fair mention, Mr. Nock is obviously no lover of diesels. He brings out one point often overlooked—the ability to work a steam engine far in excess of its normal capacity for short periods, whereas diesel, or electric locomotives have a fixed limit. Where brief, but severe, work is required, they must be built to that capacity, even though the extra power is not needed otherwise.

(118 pp., stiff paper, 105 illustrations, hard cover 9 in. x 5½ in. — Our copy from Walter Standish & Son, Sydney.)

"ELECTRIC TRACTION" ENLARGED

As from January, 1952, our companion magazine, "Electric Traction," has been increased by two pages. The annual subscription remains the same — 13/6 (11/6 to AETA members).

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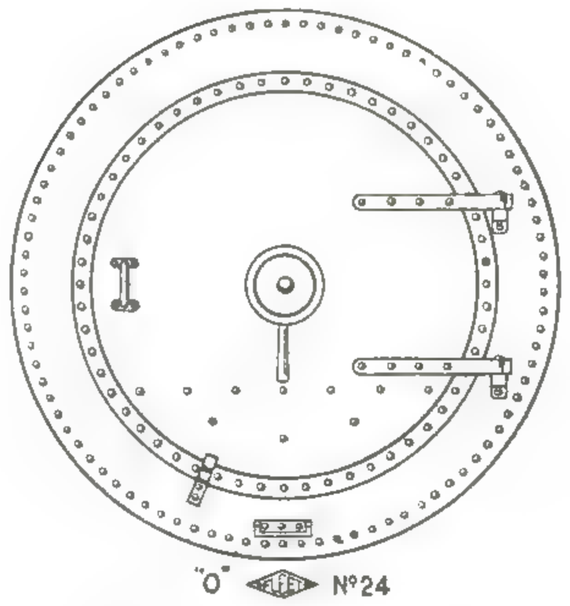

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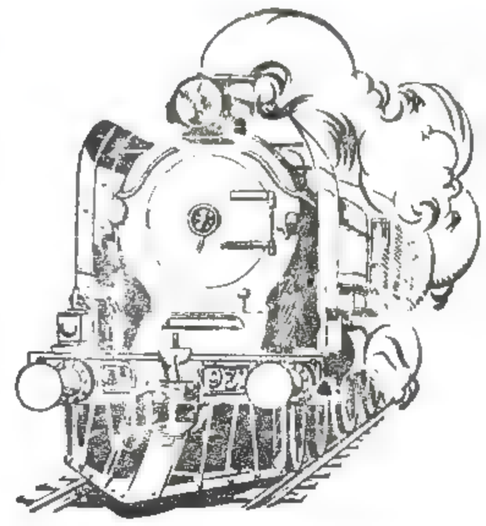

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Vol. V, No. 5
MAY, 1952

Railways in Australia

The Magazine About Australian Trains

"1.20 p.m. Ballarat and Horsham"

In This Issue

HOLIDAY BY RAIL

LOCOMOTIVE NOTES

Get Free Colour Pictures
(See Page 9)

RAILWAY ROUND-UP

MODELLING IN WOOD

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A Word From Your Editor

Dear Readers,

Every mail brings us yet another batch of letters from you — some critical, mostly helpful, and all friendly. I do wish that I could reply in person, but it simply cannot be attempted at present. As you know, the magazine is almost entirely a spare-time job — blocks, linotype, and the actual printing are the only things done professionally. Writing, editing, layout, setting up, folding, stapling, wrapping, addressing, reminders, stamping, keeping accounts, chasing advertisements, and the hundred-and-one other things which have to be done, are fitted in somehow to lunch hours and evenings, along with the usual domestic and social activities (no time for many of the latter!). If your letter remains unanswered, do not think you are forgotten; if you think the magazine could be improved in a thousand ways — so do I. But it takes time and money, especially money, for money will buy time, to some extent.

Many of you received the last issue very late, and this will probably happen again from time to time, UNLESS more of you subscribe NOW. With enough new subscriptions, I can buy time — someone else's time — to get things done more quickly, and allow more time for improving the magazine.

Those who already subscribe can help by renewing subscriptions promptly — every reminder means delay, and every delay means less money in the bank to keep things going.

Incidentally, I do not make anything whatever out of all this, so you won't be buying my new Rolls-Royce!—Yours, sincerely,

Jack Richardson,
MANAGING EDITOR.

OUR COVER PICTURE

This month's cover illustration is from the camera of reader Bob Reilly, and shows the 1.20 p.m. Down passenger train for Ballarat and Horsham leaving No. 10A platform, Spencer Street, headed by new R class 4-6-4 No. 710.

Spencer Street is the Melbourne terminus for most country trains of the Victorian Railways.

Too Much Diesel ?

Several readers have complained of the amount of space devoted to describing and illustrating the diesel electric locomotives now being placed in service all over the country. They feel that we should devote our limited space to steam operation as much as possible.

For the record, we have no personal interest in the Diesel as such. We derive no inspiration from watching it, and only mild pleasure from looking at pictures of it.

We do feel, however, that the coming of the Diesel is the biggest thing that has happened to Australian railways in our lifetime, not excepting even the several electrification projects. It has already pulled one line out of the "red," and may yet do so to others. It is obviously not a thing to be ignored, and the railway enthusiast with anything but a one-sided approach to his hobby will want to know all about it — even if only to be able to howl it down!

However, it is equally obvious that Australia will not dieselize to anything like the extent seen in the United States, and would indeed be foolish to contemplate such a thing. There will be steam locomotives in large numbers and of impressive quality for the lifetime of any one of us, and your magazine will continue to describe and illustrate them.

It so happens that several of the illustrations of diesel electric locomotives are from blocks lent to us, and that these are much larger than our own blocks; this does not imply any preference for the diesel. If we could afford it, you would have full-page shots of steam operation.

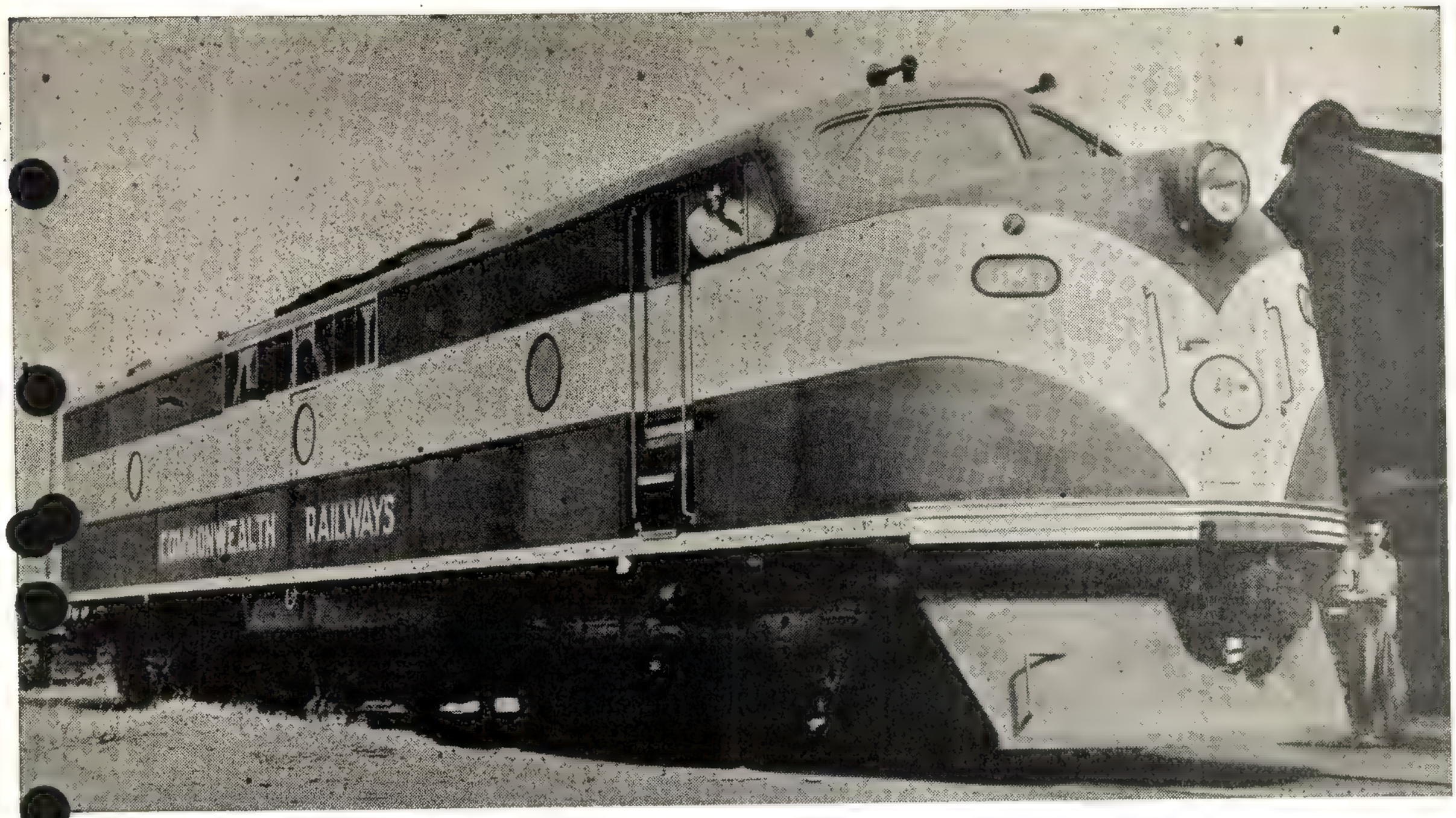
LATE PUBLICATION

We regret that it has not been possible to distribute this issue earlier.

The next issue should appear early in July.

MOVING THE OIL

New Zealand reader, W. W. Stewart, sent this view of Train No. 145 Goods, a solid train of loco oil fuel tank cars, on the New Zealand Railways, hauled appropriately by oil-burning K class 4-8-4, No. 902.



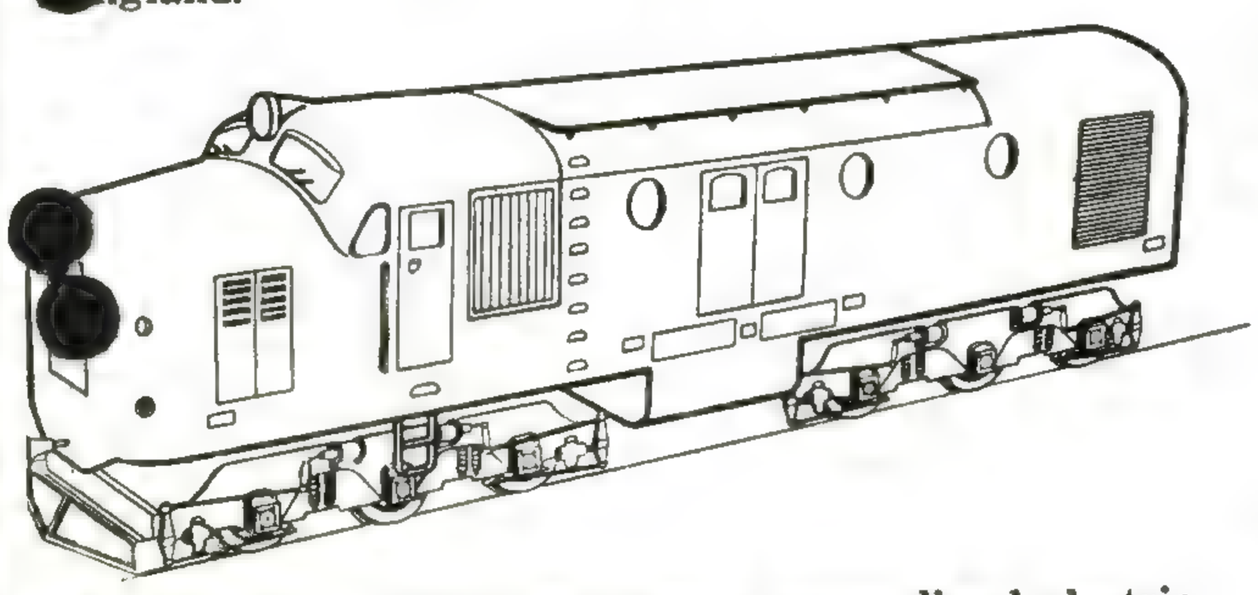
Railway Round-up

News from Australian Railways

Commonwealth Railways

ENGLISH-BUILT DIESELS

As previously reported in these columns, Commonwealth Railways have on order for their 3 ft. 6 in. gauge Central Australian and North Australian lines fourteen diesel-electric mixed-traffic locomotives with [illegible]5 h.p. Sulzer engines. The new locomotives, which [illegible]e being built by the Birmingham Railway Carriage and Wagon Co Ltd., are of the A1A-A1A wheel [illegible]rrangement, with two 200 h.p. axle-hung traction [illegible]otors on each truck. Each loco measures 42 ft. 0 in. over headstocks, with a width of 9 ft. 4 in., and is 12 ft. 8 in. high. Electrical equipment is by Crompton Parkinson Ltd., the control equipment being manufac[illegible]red for them by Allen West & Co., of Brighton, [illegible]ngland.



Sketch plan of the new narrow gauge diesel electric [illegible]motives for Commonwealth Railways North-South [illegible]nes. (Courtesy "Electrical Engineer.")

PROFIT MAKER

Railway enthusiasts find little inspiration in the glamorous Diesel, but Commonwealth Railways, whose East-West Transcontinental operations are on the right side of the ledger for the first time, may be forgiven for enthusiastic worship of the new motive power.

Last of the eleven 1500 h.p. Clyde-General Motors locomotives arrived on the job recently. Time-tables have already been speeded up drastically; a further boost will follow when new rolling stock, now under construction, is placed in service.

Above, at the works of the Clyde Engineering Company, is the loco which started all this — GM1. (Courtesy "Electrical Engineer.")

Varied Operating Conditions

The lines on which these locomotives will operate range from the 775-mile route, mainly through desert country, between Quorn, S.A., and Alice Springs, N.T., and the tropical section between Darwin, N.T., and Birdum, N.T., a distance of approximately 400 miles. Some 600 miles of this proposed North-South Transcontinental route remains uncompleted.

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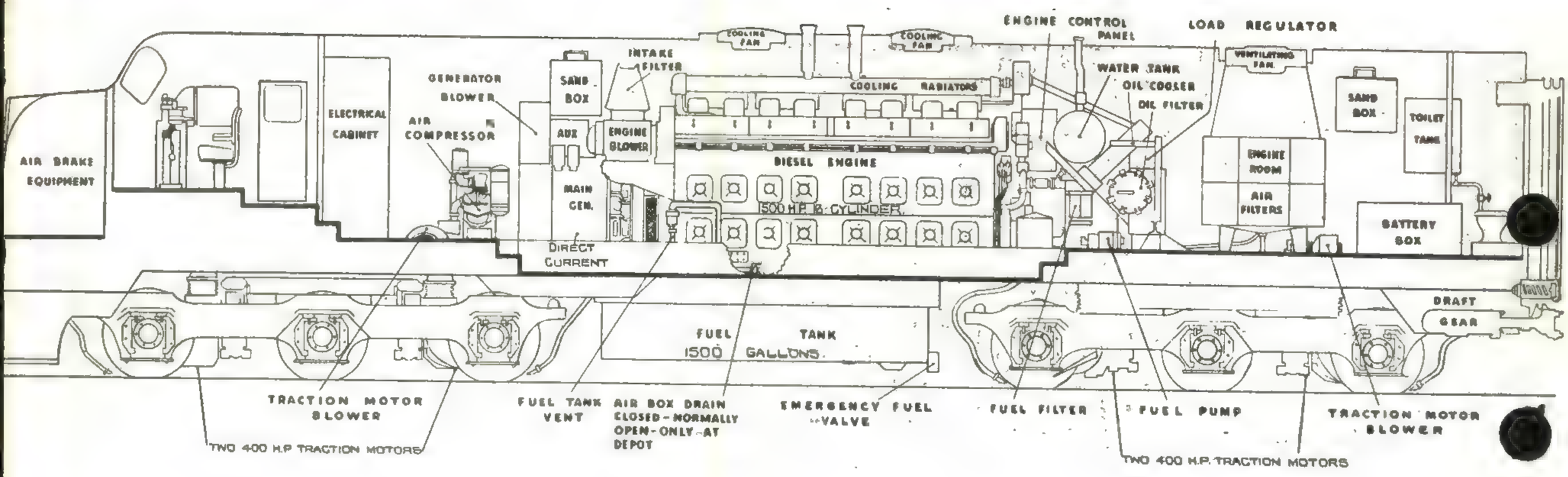

Longitudinal section diagram of Comrails 1500 h.p. diesel electrict locomotive built by Clyde Engineering Co. Ltd., Granville, N.S.W. Twenty-six locomotives on order for the Victorian Railways will be similar, but equipped for double-end operation (and, of course, to run on 5 ft. 3 in. tracks!). (Courtesy "Electrical Engineer.")

N.S.W.R. WESTERN LINE DEVIATION

Tenders Called for Work Near Lithgow

Tenders have been called by the New South Wales Railways "for deviation between Zig Zag and Lithgow, comprising the construction of two-and-three-quarter ($2\frac{3}{4}$) miles of earthwork, which includes three-quarter ($\frac{3}{4}$) mile of double-track tunnel, also the construction of concrete culverts, creek and road diversions, etc. . ." Tenders close on Wednesday, 25th June.

NEW ELECTRIC CARS FOR N.S.W.R.

Tenders have been called by the New South Wales Railways for the manufacture, supply, and delivery of 70 65 ft. Steel Interurban Electric motor cars, 35 similar trailers, and 35 trailers with buffet.

Wanted — 500 Subscribers

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(Remittances should be payable at MELBOURNE.)

A VISIT TO QUORN

A Victorian reader, writing of a visit in March last to Quorn, S.A., speaks enthusiastically of the amount of movement at this once rather isolated spot. Quorn is the junction of the narrow gauge Central Australian line of the Commonwealth Railways, with the Peterborough Division (also narrow gauge) of the South Australian Railways.

Trains noted included the 5.59 a.m. ex-Port Augusta, in which he travelled, and which comprised NM 4-8-0 No. 31 at the head of 14 bogie cars. At Quorn were 13 C.R. locos. and 7 S.A.R. During the morning NM 15 brought in the passenger train from Alice Springs, 775 miles distant. The 12.30 p.m. Up "Coaly" for Peterborough (junction with the line to Broken Hill, N.S.W., via the privately-owned Silverton Tramway) comprised 17 bogie cars headed by T 221 and T 23.

At Peterborough, in addition to S.A.R. locos., were S.T. Co. A class 4-6-0's 19 and 21, and Y class 2-6-0 13.

Peterborough is an increasingly busy junction, the ore traffic from Broken Hill converging at this point with the growing coal traffic from Leigh Creek via Quorn.

Diesel Headache

WHEEL SLIP DETECTION WORRY

Yet another little diesel problem comes to light to demonstrate that the new fashion in motive power isn't entirely the answer to a railway-man's prayer. The following extract is from the pages of "Railroad Magazine" (New York):—

When the drivers of a steam engine slip, it doesn't require any tell-tale device to inform the engineer of the fact, as you know. On a Diesel, however, it's a different story. Unless the wheel-slip light indicator operates, which it often fails to do, the engineer may not realise it.

The New York Central has been conducting an investigation of Diesel wheel slippage since 1946, started when an analysis of unexplained motor difficulties, flashovers, and other troubles associated with the tractive equipment pointed to wheel slippage as a contributing factor. Changing the drive of the recording speedometer from the idler axle to the No. 1 power axle on two passenger units revealed that there were numerous instances in regular service where the slipping wheel spun to an excess of 120 m.p.h., highest the recorder would register. Continuous slipping at such speeds occurred for distances up to 34 miles, as measured on the tread of the slipping wheel. Tapes were obtained where a pair of slipping wheels travelled as much as 60 additional miles in a single division of 146 miles. Another case near Elkhart, Indiana, showed a wheel spinning for $6\frac{1}{2}$ minutes at more than 120 m.p.h., for a tread distance of 14 miles. Tests are still under way to see if an effective means of diesel wheel slippage detection can be worked out.

BUDD CARS AT PORT PIRIE

Two of the Commonwealth Railways' Budd diesel cars, Nos. CB1 and CB2, with trailer BM76 (formerly a gas-electric motor of the Reading R.R., U.S.A.), prepare to leave Port Pirie Junction on the local run to Port Augusta and Pimba. The van in the background is being loaded for attachment to the "Trans" express to Western Australia, which also originates here. Port Pirie Junction is the meeting place of both 5 ft. 3 in. and 3 ft. 6 in. gauge lines of the South Australian Railways with the standard gauge lines of the Commonwealth Railways. (Photo. by Wal. Jack.)

SOUTH AUSTRALIAN JOURNEY

On Anzac Day (25th April) last, two enthusiastic rail fans spent the holiday on a typical outing. Here Wal. Jack, of Ballarat, Victoria, describes the events of the day, after leaving Adelaide, S.A.

The 7.50 a.m. Port Pirie train was made up of 520 class loco. 522, with cars 267, 913, 901, 706, 551 (ex-V.R. AE class), van 306, and four freight vans (Wvp, DP, and 2 DWP). Leaving on time, we were 17½ minutes late leaving Kurunye, but arrived at Port Pirie "on the dot." S.A.R. narrow gauge rail motor 102, with composite brake van, for Peterborough, was waiting, while Commonwealth Railways Budd cars CB1 and CB2 with ex-Reading R.R. trailer BM76 were docked on our right. We left Port Pirie in these cars, arriving at Port Augusta at 1.45 p.m. At Wurninowie was a burnt-out 4-wheel workmen's (?) car.

A trip to the "graveyard" showed a big change since 11th March. CA 4-6-0's 78 and 79 could not be seen, and several other locos. had "vanished." At the Port Augusta loco. sheds, four new L class 2-8-2's, Nos. 82-85, were parked together, with L80 nearby. Five engines outside, Nos. CN 70, 76, G 26 (4-6-0's), K 34 and KA 50 (2-8-0's) appear to have had their last runs. Inside, in addition to the L's, were C 64-68, CA 19, G 20. 22, No. 2 crane, and NM 38. G 23 was shunting, NM 20 doing the same with the narrow gauge stock. One GM class diesel-electric was in the Workshops yards, another GM 8, on a rake of trucks. Two Budd trailers could be seen further west.

We left Port Augusta at 3.35 p.m., arriving at Port Pirie Junction at 4.40 in CB 2. GM 2 was waiting down the yard to take out the "Trans," but our S.A.R. loco., No. 522, was missing, having been sent to bring in the 1.15 p.m. Perth train from Adelaide, which had suffered a breakdown. The wait enabled us to visit the loco. sheds, in which were two narrow gauge engines, and broad gauge Rx class 200 and 229. Standard gauge C.R. locos. were G 2 and CN 77, with Budd car CB 3.

The Adelaide train eventually arrived from Ellen Street (the actual Port Pirie terminus for S.A.R. trains) with the same cars as on the Down trip, and Rx No. 229 at the head. We left at 6.01, 16 minutes late. and the journey was painfully slow, proving too much for the old Rx. 37 minutes late at Nurom, we passed 522 on the Perth train. At Merriton, No. 529 came on, leaving at 8.13 p.m. in a dash for the "big lights." At Snowtown the Cafeteria car was attached, after which we left at 9.10; we left the train at Ovingham, in the suburbs, at 11.37 p.m.—and home to bed!

QUEENSLAND RAILWAYS

New Air-Conditioned Trains

The new 13-car set for the "Sunshine Express," built at Ipswich Workshops, is expected to be ready for regular service in August. This train, which will operate over the 1043-mile route between Brisbane and Cairns, will be air-conditioned throughout. A power van will provide electricity for all purposes throughout the train.

Eight other air-conditioned trains, comprising 99 cars, are being built at the new plant of the Commonwealth Engineering Co. at Rocklea, Q.

N.S.W.R.'s "BLACK WEDNESDAY"

Three Accidents in One Day

Wednesday, 7th May, was a black day for the New South Wales Railways. At 6.33 a.m., in a fog, a freight train bound for Goulburn crashed into the rear of a stationary freight at Maldon, 49 m. 4 ch. from Sydney on the Main Southern line. The Goulburn train was headed by new diesel-electric locomotives Nos. 4005 and 4006N, one of which had the superstructure virtually demolished. The driver of this train died in hospital. No other casualties resulted, the guard of the stationary train having left his van shortly before the crash. Seventeen freight cars were derailed, many of them being destroyed, and both tracks were blocked for eleven hours. The Melbourne Limited and Melbourne expresses were diverted over the connecting line between Moss Vale and Unanderra, reaching Sydney two hours late.

Train Struck By Wreckage

When the first passenger train was allowed past the wreckage, one of the damaged locomotives, which had been lifted to the side of the track, fell against it, damaging several cars and causing a further 90 minutes' delay.

SUBURBAN TRAINS CRASH

Heavy Casualties

Less than twenty minutes later than the Maldon crash, an 8-car electric train from Bankstown ran into a stationary train from Liverpool at Berala, 11 m. 32 ch. from Sydney, also on the Main Southern line. Seven passengers were killed and 136 were injured, one dying subsequently. This was the worst crash in New South Wales for 26 years, and the first fatal crash on the suburban electric lines.

Full details, including cars involved, will be found in "Electric Traction."

ABOUT ENGINES

New S.A.R. Locomotives

740 Class 2-8-2's

New 2-8-2 locomotives ex-Clyde Engineering Co. have been designated the 740 class. The 10 locomotives of this class are virtually identical with the Commonwealth Railways' L class (except for the 5 ft. 3 in. gauge, in place of 4 ft. 8½ in.), and, like them, were originally ordered by UNRRA as part of a scheme for rehabilitating Chinese railways. The changed political situation in China orphaned them until the two Australian systems adopted them. The N.S.W.R. authorities were believed to have been interested, but the width of the UNRRA engines exceeded the permissable width over much of the N.S.W.R. system.

Owing to the difficulties at present experienced with shipping, the new locomotives are being sent from Clyde to South Australia by rail in a dismantled condition. No. 740 arrived on 23/2/52, was assembled at Islington Workshops, and ran trials on 29/2/52, being placed in service the following day. No. 741, noticed in Sydney, N.S.W., on 2/4/52, arrived at Islington on 17/4/52 and was in steam a week later; a trial run to Mile End took place on 1/5/52.

The whistles on these engines are placed horizontally across the boiler, and the tone has been converted to the standard S.A.R. Nathan chime.

The new 2-8-2's are in freight service, No. 740 having been observed on a north-bound Goods through Ovingham on 9/4/52.

Australian Garratts Purchased

To ease the difficult locomotive position on the Peterborough Division (narrow gauge), pending arrival of the 4-8-2 + 2-8-4 Beyer-Garratts now on order, the S.A.R. has purchased six Australian Standard Garratts, of the same wheel arrangement, from the Western Australian Railways. These machines have been designated the 300 class, and will be numbered 300-305.

No. 300 entered service on 19/3/52, 301 following in April. To carry these locomotives over the broad gauge tracks to and from Islington Workshops, two Fb class flat cars have been altered suitably, being reclassed FL.

Biggest on the Narrow Gauge

The ten Beyer-Garratt locomotives ordered from the Societe Franco-Belge will be the largest narrow gauge (3 ft. 6 in.) locos. in Australia. Generally similar to the Beyer-Garratts recently acquired by the Queensland Railways, they will, however, have a tractive effort of 43,520 lbs., and will weigh 147 tons.

D.E. in Trouble

Third of the new 900 class mainline diesel-electric locomotives on the S.A.R., No. 902, entered service on 8/4/52, with a trial run to Gawler, on the North line. This ended ignominiously, reportedly through someone having omitted to place oil in the axleboxes!

750 Class At Work

The ex-V.R. 2-8-2's (N class on the V.R., 750 class on the S.A.R.) continue to give useful service, although there has been a report that they cannot negotiate successfully some sharp curves in the Port Adelaide Docks area. No. 754 was running freight services on the Adelaide-Port Adelaide-Outer Harbour line during April.

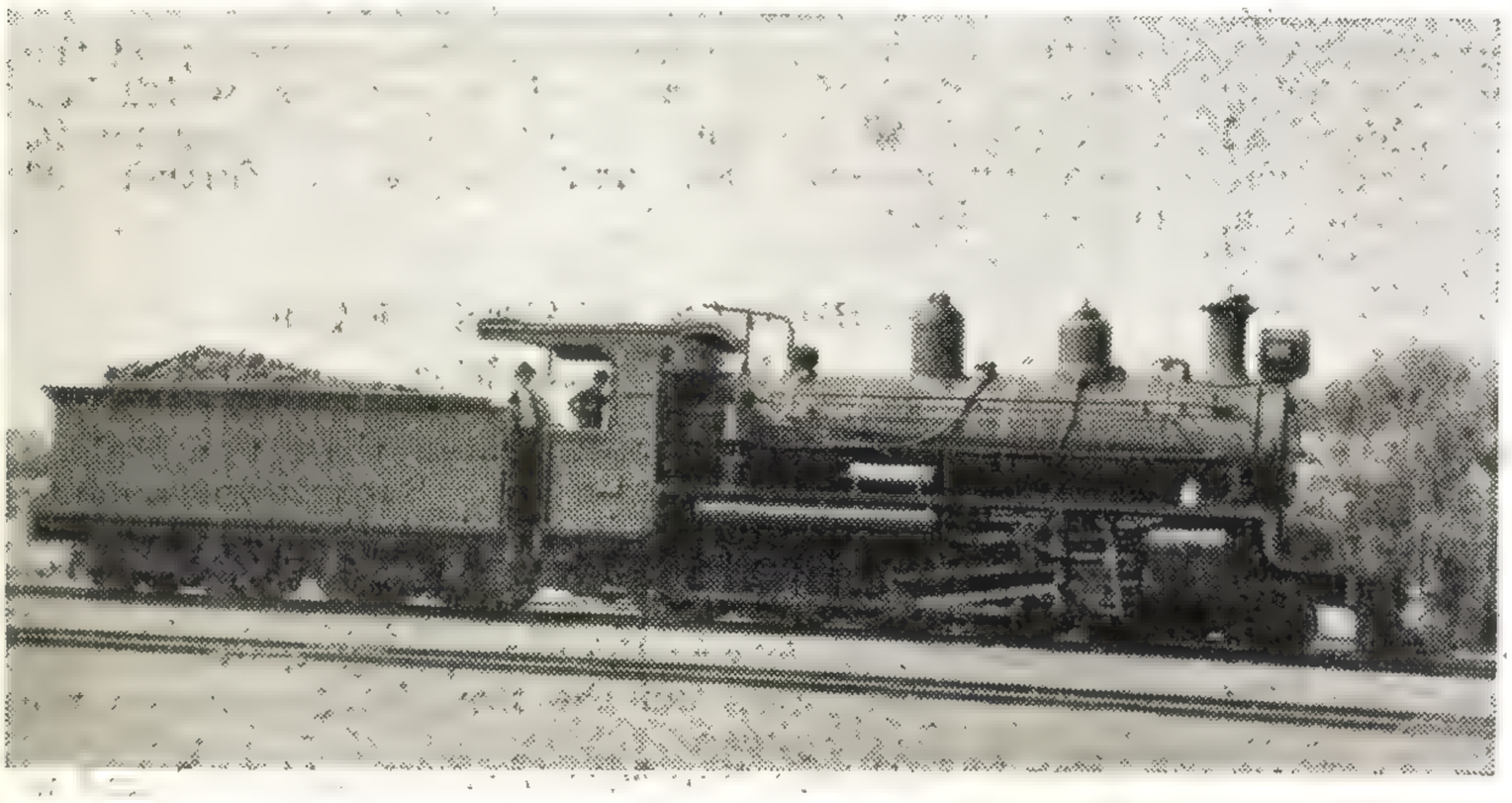
NEW LIGHT-LINE ENGINES

M Class Pacifics

As part of the Chapman Plan for re-organization of the Tasmanian Railways, ten light 4-6-2's have been obtained from Robert Stephenson and Hawthorns Ltd., England, to replace obsolete branch line motive power. In view of the urgent need for these locomotives, it was decided to adopt the metre-gauge XB class design of the Indian State Railways, suitably altered for the Tasmanian 3 ft. 6 in. gauge. Principal dimensions of the new engines, which are numbered M1 to M10, are as follows:—

Cylinders (two): 16 x 24 in.
Driving Wheels: 4 ft. 7 in.
Boiler Pressure: 180 lb.
Tractive Effort: 17,090 lb.
Coupled Wheelbase: 10 ft. 6 in.
Length over Buffers: 59 ft. 2¾ in.
Total Weight: 96.64 tons.
Coal: 6 tons.
Water: 4000 gallons.
Maximum Axle Load: 10 tons.

After arrival in Tasmania, the locomotives were readied at the Launceston workshops, and all are now in service. Distinctive features include SCOAP driving wheels and an elongated cover extending over both sandbox and steam dome.



NARROW GAUGE POWER

Bare ground and a peppercorn tree, typical of so many scenes of the Australian interior, form an appropriate background for No. 21, a 3 ft. 6 in. gauge 4-8-0 used on the long run from Quorn, S.A., to Alice Springs in Central Australia. (Comrails Official Photo.)

W.A.G.R. LOCO LIST

W.A.G.R. locomotives in service as at 21/4/52 are given below, by courtesy of Mr. B. W. Jackson. who visited that system recently. Numbers in brackets are totals given in an official list dated June, 1951, and comparison shows the improvement in the W.A.G.R. motive power position since that date.

A, 2-6-0—5 (5); ASG 4-8-2 + 2-8-4—16 (20); B. 4-6-0T—8 (8); C 4-6-2—3 (4); Cs 4-6-2—12 (11); D 4-6-4T—nil (nil); Dd 4-6-4T—10 (10); Dm 4-6-4T—8 (8); Ds 4-6-4T—19 (19); E 4-6-2—nil (nil); Es 4-6-2—44 (47); F 4-8-0—nil (nil); Fs 4-8-0—53 (54); G 2-6-0 and 4-6-0—27 (27); H 0-6-0T—1 (1); K 2-6-4T—15 (15); L 4-6-2—19 (19); Beyer Garratt 2-6-0 + 0-6-2, M—nil (1), Ms—3 (3), Msa—10 (10); N 4-4-4T 27 (28); O 2-8-0—10 (10); Oa 2-8-0—17 (17); P 4-6-2—17 (17); Pr 4-6 2—17 (17); Pm 4-6-2—19 (19); Pmr 4-6-2—16 (16); Q 4-6-0—nil (1); R 4-4-2—1 (1); S 4-8-2—10 (10); T 4-4-0—1 (1); U* 4-6-2—14 (14); W 4-8-2—60 (12); Petrol Shunter (Workshops)—(1); al—446 (434).

(Actually 3 or 4 W class were waiting to be put in service, but all have been included for convenience.)

* Oil burners.

The new 4-8-4 diesel-electrics now on order will be classed X.

NEW W.A.G.R. DIESELS

The 48 mainline diesel electric locomotives on order from Metropolitan Vickers for the Western Australian Government Railways will be of the 4-8-4 or, more rrectly, 2-Do-2 wheel arrangement. They will have starting tractive effort of 26,000 lb., with 12,000 lb. at 25 m.p.h., and 5,600 lb. at 45 m.p.h. Maximum axle d will be 10 tons and the diesel engines will develop 5 b.h.p. Wheel diameter will be 2 ft. 7½ in., the fixed wheels being of the same size as the bogie wheels. The new engines will be double-ended, with a flat, stumpy nose projecting from the cab at either end. Headlights will be fixed centrally over the cab windows. is expected that the new engines will be designated X class.

First deliveries are expected in February of next year.

Also on order are three Drewry diesel-mechanical switchers and 18 400 h.p. diesel-electric switchers by British Thompson-Houston Ltd.

QUEENSLAND RAILWAYS

American-built Diesel-Electrics

n mainline diesel-electric locomotives being built in he U.S.A. are expected to arrive in time to inaugurate the new "Sunshine Express" service (see item else-

Queensland Railways are considering large-scale dieselization as a means of eliminating wasteful ulage of fuel and water on certain difficult routes. one such route, loco. requirements are said to comprise 70% of the total freight carried.

V.R. Loco. News

V.R. MAINLINE DIESELS

First Expected Soon

The first of the 26 diesel-electric locomotives on order from the Clyde Engineering Co., Sydney, N.S.W., is expected to arrive in Melbourne in June or July. These locos. are generally similar to the Commonwealth Railways' GM class, but are double-ended and, being powered on all axles, are Co-Co, the CR locos. being A1A-A1A.

As well as the North-east and Adelaide lines, it is expected that the diesels will see service on the Tocumwal, Mildura, and Port Fairy lines.

V.R. PASSENGER CARS MIGRATE

Two former V. & S.A.R. Joint Stock cars of Victorian design, Nos. 7 and 8, have been purchased by the South Australian Railways, on which system they are now the 550 class, numbered 550 and 551, respectively. No. 550 looks most attractive in S.A.R. green and cream. while 551 remains maroon.

Quite a number of V.R. cars have been hired by the S.A.R. in recent years, and at the present time Nos. 4, 11, and 19 AE are in regular service on the Port Pirie line.

BOOK REVIEW

MODERN WORLD BOOK OF RAILWAYS

By Paul Townend

(London, Sampson Low, Marston & Co. Ltd.)

Sampson Low is a name well-known and respected for "Jane's Fighting Ships" and other accepted books of reference. More recently, "World Railways" made a place for the firm in railway literature. The "Modern World Book of Railways" is a less ambitious volume, but equally well prepared and wide in scope. While resembling certain famous books, it is definitely not just a boys' book, but intended for adult reading. We have commented unfavourably in the past on "all-about-everything" books, and there is a touch of this about the new volume. It is, however, well written and superbly illustrated with a world-wide range of pictures which get right away from the all-too-familiar illustrations one finds over and over again in so many "new" railway books. A good present.

(160 pp., 10¾ in. x 8 in., hard cover. Our copy, McGill's Agency, 17/6.)

BRITISH RAILWAYS SECTIONAL MAPS

(London: Ian Allan Ltd.)

A useful book containing 39 maps 10 in. x 7¾ in. on stiff paper, in seven colours, of British Railways as they existed immediately prior to nationalization. Joint and un-grouped railways are shown clearly, and all stations, both passenger and goods, as well as halts, platforms, and junctions are indicated, and there is a useful index.

From these maps, which are reproduced from the Railway Clearing House map, it is possible to understand much that has been obscure to those not able to visit Great Britain, particularly the closing of branch lines. The wonder is that some were ever built.

(Available at usual railfan shops. Price, 13/6.)

LES LOCOMOTIVES A VAPEUR DE LA S.N.C.F.

(Text by various authors)

(Paris—Documents et Collections D'Art)

Like their British counterpart, French National Railways comprise several regions, corresponding genrally with former private companies. The French, however, possess a wealth of variety in locomotive design far in excess of that obtaining across the channel. Some of the most extraordinary machines in service today are running on French metals, not the least being the 0-6-2 + 2-6-0 articulated tank engines in Paris.

Illustrations are adequate, and the French text need bother no railfan. Five paper-covered books—one for each region—complete the set.

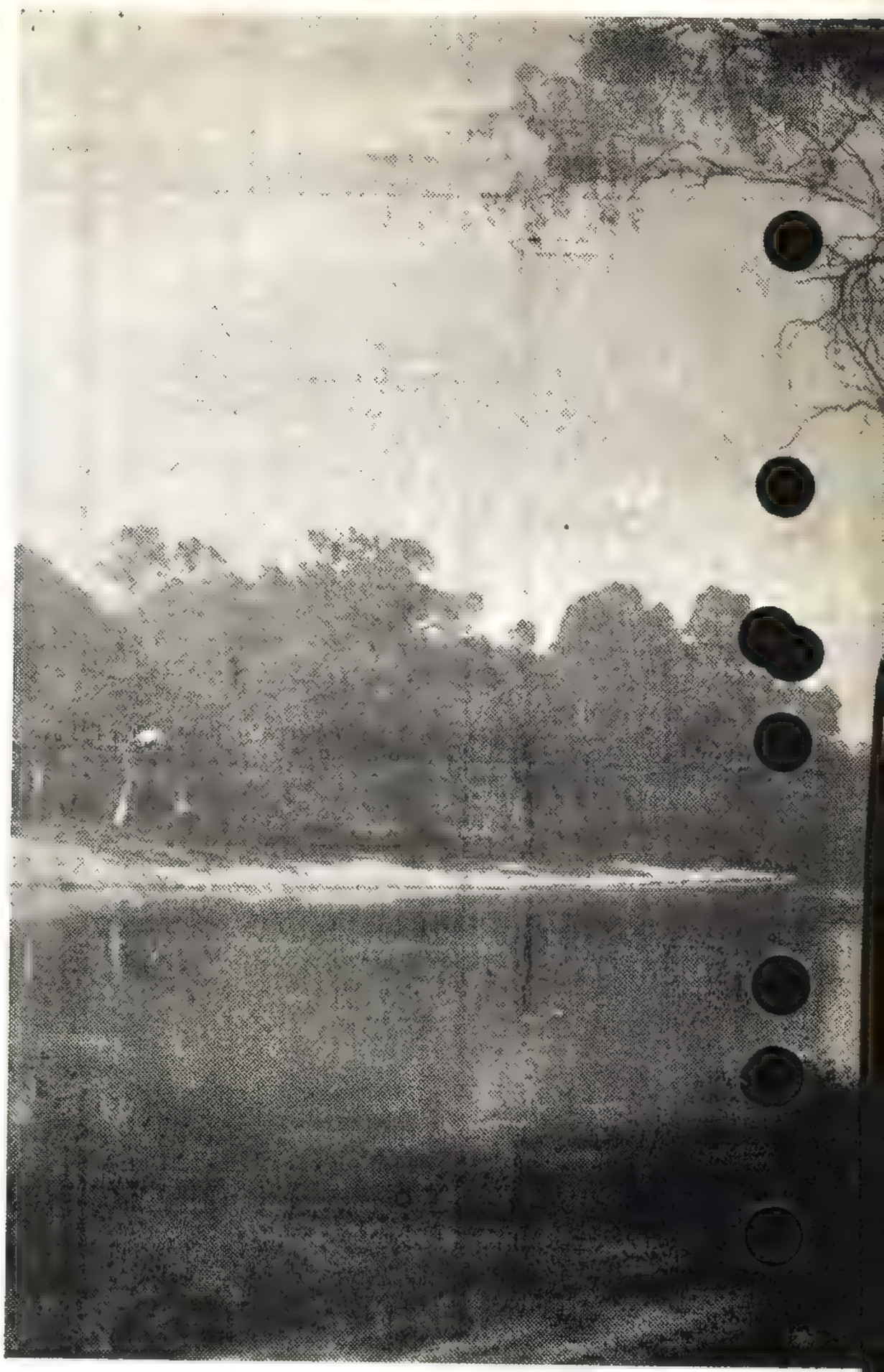
(Obtainable from J. O. Smith, 9 Campbell St., Punchbowl, N.S.W.)

JOURNEY'S END

It is difficult to find a railway line in New South Wales without really attractive scenery somewhere along the trackside. Some lines, such as that to Newcastle, have so much that it is difficult to take it all in on one trip.

The note with this delightful scene described the location as Tocumwal (on the N.S.W.-Victorian border), but on the back of the block was scribbled "Nowra Bridge, N.S.W. Railways." Perhaps readers can enlighten us. In either case, it is located at the end of the line, and who would wish to go further?

(Courtesy N.S.W. Railways, Publicity Department.)



HOLIDAY BY RAIL

By C. EINSIEDEL

(Continued)

The Northern and North-Western lines of the New South Wales Railways attracted Mr. Einsedel for the close of the third week of his railway holiday on an "All-Lines" ticket. Here he describes his experiences in a further instalment of this detailed account of every-day operation on Australia's largest railway system.

The same engine and train comprised the Up express the next morning, leaving Armidale at the odd time of 9.04 a.m. Interesting orchard country around Kentucky, with a cool store at Kentucky South, were followed by Walcha Road, with its island platform, the regular crossing place with the Down Glen Innes Mail. The engine crews changed over here, the Up now being in charge of Werris Creek men. Water was taken at Woolbrook, after which followed easy, downhill running, with constant curves. There is little to spare in the Up schedule, as with the Down, and the arrival at Werris Creek, at 12.22 p.m., was two minutes late.

This is the junction for Moree, but I decided to go along for the ride, mainly to watch developments of brake trouble which became apparent at Woolbrook, 60-odd miles back. It appeared that the brakes on one pair of wheels were slow in releasing, which caused the wheels to skid for some distance after each brake application. The trouble persisted, despite attention by the train examiner at Werris Creek. Three cars added there brought the total to 291 tons and at Willow Tree, 22 miles further on, the assistance of a 2-8-0, No. 5443, was needed as a banker over Ardglen. Leaving Willow Tree, the S.M. noticed the skidding wheels, and the train was stopped. Tests by the driver, who did not appreciate having to drag a "flat" up the steep grade, resulted in the air being cut off the troublesome car. By this time, 26 minutes had been lost, but four were regained by Murrurundi, where the banker came off. I waited 20 minutes for the Down, the trains crossing at Blandford, the next station.

Engine 3535, after watering at Murrurundi, did not have a banker over Ardglen, and speed dropped to 10½ m.p.h. towards the top, three minutes being lost on the run to Willow Tree; the train was fifteen minutes late into Werris Creek at 3.53.

Since 5/9/49, the connection to Moree has been by a 2-car diesel set, reducing the time for the journey by 45 minutes as far as Narrabri. This was terminus of the corresponding steam train.

After transfer of van loading, the departure at was only nine minutes behind. Running between stations as far as Narrabri Junction provided the fastest part of the trip from Sydney as, with nine stops aggregating 26 minutes, including eleven minutes at Baan Baa to cross the Up North West Mail, 96 miles was covered in 2 hrs. 44 min., or se minutes less than the schedule. Speed reached 60 m.p.h. on the easy track, the best run being 11 miles in 13 minutes, start-to-stop, from Gunnedah to Emerald Hill. Arrival at Narrabri for a quick evening meal was only a minute late at 7.05 p.m. Apparent 40 m.p.h. limit exists between Narrabri and More this 60 miles of almost level track is scheduled at 56 min., including a little recovery time. This needed, too, as the crossing of an Up Goods at Edgeroi took six minutes and the end of the run at Moree, 413½ miles from Sydney, came three minutes late at 9.10 p.m.

Next morning I noted that all passenger cars in the yard had been locked overnight, to prevent their occupation by hoboes. The Up diesel train, rat liberally designated an express on the handbill anno ing the new service, was due away at 7.30 a.m., but was held for 12 minutes by the late arrival of the

own Mail. Although the schedule is 10 minutes aster in the Up direction as far as Narrabri, arrival there was two minutes early. Increased speed after arrabri Junction was most marked, the first section of 10¾ miles to Turrawan being run out in 15½ minutes; best for the rest of the trip to Werris Creek was 14 minutes for the 11 miles from Emerald Hill to Gunnedah.

Werris Creek is almost wholly a railway town and, being a junction, handles much traffic. Some of the best locomotive coal comes from a mine some miles to the south. At the station my attention was drawn by the monogrammed initials "GNR" on cast-iron work. he line was known as the Great Northern Railway hen first opened. "Great" was a much overworked tle in the early days of railways.

Connection to Sydney was with the "Northern Tabl~lands" express from Armidale, which was away only three minutes late, at 12.35 p.m., the 35 having a load of 296 tons. Again a banker over Ardglen, the single engine limit being 268 tons. Eight miles further on, at Mulwalla (a crossing loop), the Down express was waiting as the Up ran through. Ten minutes te leaving Willow Tree had become one minute early nto Muswellbrook, and from there to Sydney it was on time or ahead of it all the way. Track was single at this time all the way from Wallangarra to the junction with the North Coast line just outside Maitland, although duplication is now in progress as far as Muswellbrook. The manual staff exchanging was an eye-opener to me. Miniature staffs carried in leather pouches on cane hoops were used, transfers being made at speeds up to 40 m.p.h.

Apparently 35's were being used only between Armidale and Broadmeadow, and between Brisbane and South Grafton (North Coast line), as I saw none elsewhere. The usual change was made at Broadmeadow, No. 3823 (a Pacific) continuing the run, the only intermediate stops being at Gosford, and at the Sydney suburbs of Hornsby and Strathfield. The 38's must relish the easier timing on this train, compared with the "Flyer," though they do not appear to have any trouble maintaining schedules with the latter. The Saturday timing for the "Northern Tablelands" gives a Sydney arrival at 8.04 p.m. (7.57 weekdays), which probably explains why the Hornsby-Strathfield run took 26 minutes ("Flyer" 18) and, in spite of a three minutes' stop at Strathfield, arrival at the terminus was a minute early.

To Strathfield and return was the only trip the next day (a Sunday), this ending the third week, for which the mileage of 1959 (including 292 in Queensland) brought the total to 5305.

(To be continued.)

ONE ENGINE MAKES A TRAIN

It is well-known that, officially speaking, a train can consist solely of an engine, i.e., a "light engine," but for a train to consist of six cars and a van, devoted to nothing else than conveying an engine "complete, in many parts," is something else. It is in such a fashion that the new S.A.R. 740 class are being delivered.

No. 740 arrived at Islington, S.A., distributed as follows:—Wheels and frame on S.A.R. FB 8672 (40 tons); tender on V.R. QB 1 (24 tons); boiler on V.R. S 158 (36 tons); cab and trailing truck on S.A.R. FBF 8571 (15 tons); leading truck on S.A.R. FB 8546 (6 tons 9 cwt.); loco. parts in V.R. IA 14199 (3 tons).

An Rx class 4-6-0 headed this interesting procession.

COLOUR PICTURES FREE

Erie Railroad

Any reader who would like a set of four postcard-size, colour photographs in Plastichrome of famous trains of the Erie Railroad may obtain them by sending an International Reply Coupon, together with a self-addressed envelope, to Mr. A. G. Oldenquist, Passenger Traffic Manager, Erie Railroad Company, Midland Building, Cleveland 15, Ohio, U.S.A. Mention this magazine when writing.

Mr. Oldenquist made this very kind offer in a letter to us, in which he mentioned that he had seen a copy of "Railways in Australia" and thought that Australian rail fans might like to have the pictures.

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LETTERS FROM THE CHAIR

Hi, there!

Shakespeare's Theseus referred to "the rose that lives and grows and dies in single blessedness." He went on, you may remember, to deprecate such a state, and it is much the same with model railroaders. We know, of course, many top-ranking modellers who thrive without benefit of club or society — probably some of the greatest among them work alone — but for most people, especially the newcomer to the hobby, to belong to a club is a definite advantage. The novice, and even the veteran, run up against problems of one kind or another, and it is most helpful to be able to discuss them with others. Then, there is the fun to be had from club layouts, and the stimulus aroused by seeing what other fellows have done.

We have to admit, regretfully, that some clubs have been accused of cliquishness. A little thought should enable members to decide whether this charge applies to them and, if so, we suggest that you remember your own shy beginnings and welcome the newcomer.

Were Shakespeare alive to-day, he would undoubtedly have written:

"Thrice blessed is the fan who joins a club."

Cheerio till next month,

THE ARMCHAIR MAN.

Gauge and Scale

MODEL RAILWAY STANDARDS

These terms seem to cause considerable confusion in the minds of many railway modellers, particularly those not acquainted with the various standard works on the subject. The following definitions are those adopted by the Australian Model Railway Association.

GAUGE is the distance between the inside faces of the track, and has no definite relation to scale, except that universal standard gauge (full-size) is 4 ft. 8½ in., and that, when modelling standard gauge equipment,

the scale should relate track to rolling stock as nearly as possible.

SCALE is the ratio of size borne by your models to the prototype and is generally stated in fractions of an inch or millimetres to the foot in the original.

The commonest gauges and scales are as follows:—
1¼ in. gauge, with a scale of either ¼ in. or 7 mm. to the foot.
00 (English Commercial)—16.5 mm. gauge, using a scale of 4 mm. to the foot.
00 (Fine Scale)—19 mm. (American) or 18 mm. (English) gauge, using a scale of 4 mm. to the foot.
H0—16.5 mm. gauge, using a scale of 3.5 mm. to the foot.

Modelling in Wood and Cardboard

[Continued]

In modelling box cars or vans, the actual thickness of the walls is of no importance as far as scale is concerned, and a body made from a solid block of wood would be quite in order, except for the needless weight involved. A block of soft balsa, suitably shaped, would overcome the weight problem, but balsa is bad medicine to use at any point in a model car where wire parts are to be attached. The usual method of fixing wire parts to solid wood is to drill an undersized hole and then drive the wire into the hole. Due to the spongy nature of balsa, it is not possible to use this method, so the solid block idea is out.

I suggest ⅛ in. thick ply for sides of long cars (use ordinary 3/16 in. ply if ⅛ in. is not obtainable), and 1/16 in. ply for four-wheeled vans. Use some of the ¼ in. pine from the floor material for end walls of either type. These sizes refer to 0 gauge, and proportionately lighter material should be used for H0 or 00.

One may consider the suggested thicknesses too massive for the job in hand, but don't you believe it! It's a much simpler matter to fix grabirons, ladders, brakewheels, steps, etc., immovably into a car side of ⅛ in. plywood than into, say, 1 mm. ply, and the heavier ply will never bow or bulge after it has been built into a long 0 gauge car body, whereas thinner walls may do so unless they are adequately braced inside.

When cutting out the side and end walls, make the sides long enough to cover the edges of the end walls. The reason for this is that a model car is almost invariably handled and held by the two sides, and these naturally tend to be forced inwards. This is particularly important in an open car, as the end pieces when fitted between the sides make for greater structural strength against this inward pressure.

Let us assume that you are building some kind of wood-sheathed boxcar or van. If you examine the picture and plans of the original, you will see that the exterior surface is covered with boards or planks applied vertically side by side to form the outside walls. In actual fact, they are tongued and grooved, like a flooring board, which makes a stronger and more rigid assembly than the familiar domestic weatherboard type of covering. To simulate these planks on a model, mark in along the full length of one edge of your car side a row of equally-spaced pencil marks, the actual spacing depending on the gauge and scale, and the width of the planks in the full-size car.

For example, in an 0 gauge model built to ¼ in. scale, a spacing of 1/16 in. would represent 3 in. planking. However, with narrow planking such as this, a spacing

(Continued overleaf)

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of 3/32 in. would be better, as allowance should be made for the actual width of the grooves you are about to make. If the grooves are not made somewhat heavier and slightly over scale, they will be practically invisible when the car is painted, and your patient work will be just so much wasted effort. Just the same, this is not an invitation to carve 3 in. x 3 in. gashes into the full length of your car sides and ends, as so many beginners tend to do!

To return to the job in hand. . . . Using a small steel carpenter's tri square as a guide, scribe a vertical line into the wood at the first dot. Slide the square along to the second mark and repeat the process, and so on until the whole side has been covered with a series of evenly-spaced parallel indentations. The actual scribing tool can be anything that leaves a suitable V-shaped groove in the surface of the wood. A wheel-type glass cutter works quite well, and so does a small screwdriver. A steel knitting needle, a gramophone needle set in a pin vise, or an old blunt "vegetable" knife are some of the many tools available. So long as the edge or point used is smooth enough to depress the wood fibres without cutting them, and not to tear the wood, the results obtained depend to a great extent on the amount of pressure applied as the scribing tool is drawn along the steel edge of the square.

Always keep in mind, when cutting out car sides that are to be scribed, that it is preferable to scribe along the grain of the wood if possible. Scribing across may tear up the fibres sufficiently not only to cause unsightly scars, but to give trouble when the car is painted. This rule of scribing along the grain of the wood is not by any means invariable, but a beginner would be wise to stick to it until he gains experience.

"Scribing," incidentally, is the term invariably applied by railway modellers to any series of evenly-spaced lines pressed or grooved into various parts of model rolling stock or structures to represent the joints in planking or, conversely, the width of individual planks. The term has other applications, but this is its usual meaning in model railroading.

Having cut the floor and sides, and scribed them if necessary, the obvious thing is to fix them together accurately and squarely. This accent on trueness will come more or less automatically if the five component pieces are cut to exact size in the first place. For example, if one end wall is 1/16 in. wider than the other, this will obviously cancel out any super accuracy incorporated in the other four pieces; one or both sides will bow out at one end to accommodate the over-wide end wall.

(To be continued)

Club Notice Board

Australian Railway Historical Society

SYDNEY: Railway Institute (Devonshire St.), 2nd Tuesday of each month. Secretary: H. McDonald, 3a Oxford St., Burwood, N.S.W.

MELBOURNE: V.R. Institute, 4th Thursday of each month. Secretary: R. T. Sloggett, 12 Ayr St., Blackburn, Vic.

Adelaide Model Railroaders

meet every Tuesday night at 8.00 p.m., either at the Y.M.C.A., Gawler Place, or members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park, S.A. Phone X 3233.

Australian Electric Traction Association

MELBOURNE: V.R. Institute, 3rd Friday of each month, at 8 p.m. Secretary: W. G. Mercer, 18 Embling Avenue, Malvern, S.E.4., Vic.

SYDNEY: Railway Institute (Devonshire Street), 3rd Thursday of each month at 8 p.m. Secretary: R. Young, 26 Strathallan Ave., Northbridge, N.S.W.

Australian Model Railway Association

New members welcomed. Write to the Secretary, 105 Blake St., Reservoir, Vic.

Brisbane Model Railway Club

Meetings held on 1st and 3rd Thursday of each month at 36 Goulburn St., Kedron, at 8.00 p.m. Secretary: C. Harrison, 110 Haig St., Stafford, N.3 (to whom all enquiries should be made). Gauges O and HO/OO.

National Model Railroaders' Association (Australian Area)

welcomes new members. Write to The Area Representative, N.M.R.A., 22 Whish Street, Windsor, N.3, Queensland.

Queensland Society of Model Engineers

meets 4th Monday of each month, at 8 p.m. Contact the Secretary, C. H. Garner, "Elsinor," Gray's Pd., Gaythorne, Brisbane, Q.

South Australian Society of Model and Experimental Engineers

holds meetings on the 2nd Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

Sydney Model Railway Society.

meets at 273 Castlereagh Street, Sydney (4th Floor), each Monday evening from 6.30 to 9.30. When Monday is a zoned day, the meeting is held on the following Tuesday. Visitors are welcome. Bruce R. Davies, Hon. Secretary, Pacific Highway, Mt. KURI-GAI, N.S.W.

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Secretary: R. R. Steward, same address.

Victorian Model Railway Society

meets 3rd Wednesday of each month at 8 p.m., at the Model Dockyard, Swanston Street, Melbourne. Visitors welcome. Secretary: J. H. Hooker, 1 Shaftesbury Avenue, MALVERN, S.E.4, Vic.

W.A. Model Engineering Society

meets on the 1st and 3rd Wednesdays of the month at 8.00 p.m. in the Railway Institute, Wellington Street, Perth. Secretary: J. Norman, 54 Woodsome Street, Mt. Lawley, W.A.

ALL CLEAR— BUT THEY DIDN'T COME

Anybody know what it is?

American, of course, from the right-hand arrangement of the arm, and other details.

Actually, the illustration was prepared for a catalogue just prior to the war, and the distant signal was a new Lionel product not then on the market. The war came, but not the signals. With dollars the way they are, you'd better give up waiting and settle for a Hornby!

THANKS!

The Editor thanks W. G. Sutcliffe, Wal. Jack, Roger Jefferies, John Shoebridge, Bob Young, L. F. Holmes, among others, for news items used in this issue.

OUR MISTAKE—

The lower illustration on page 8 of our April issue was incorrectly captioned. A reader who was working at Newport at the time points out that the N shown was one of a previous programme, some 25 years old, while the frame in the foreground was probably that of an S class 4-6-2.

Our correspondent adds that he is in firm agreement with our comments on the present situation at the V.R. workshops.

G.M. — Not G.E.!

Apologies to General Motors for inadvertently describing the new Comrails diesel electric locomotives as "Clyde-G.E. models." They are, of course, "Clyde-G.M."

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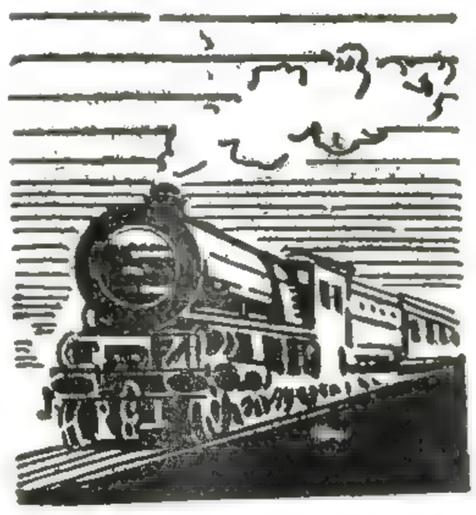

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LETTERS TO THE EDITOR

S.A.R. Diesel Operation

The Editor,
Railways in Australia,
Dear Sir,

With regard to the paragraph on S.A.R. diesels (R. in A. 4/52), I beg to differ from the correspondent's statement that a 500-class steam loco worked the Up train back from Tailem Bend because the diesel had returned on a freight. This is not so, because the diesels work right through to Serviceton with the Down train and there couple on to the Up train, bringing it to Adelaide.

I agree that there have been occasions when the 500-class 4-8-4's have been called upon to perform their old task of hauling the "Overland" to Tailem Bend, from which point it was taken to Serviceton by 600-class 4-6-2's. This was usually for about a week at a time when only two diesels were in operation, as they had to be serviced. On one occasion, No. 901 broke down just after passing Mitcham station (4 miles from Adelaide) on the Down trip, and a steam loco was sent out, No. 901 being towed back by No. 900. It was out of service for a week, during which time the express was steam-hauled.

There are now 3 diesel locos in operation, No. 900 (Lady Norrie), 901, and 902, but until recently there was only the twin unit with a combined horsepower of 3,250, and tractive effort of 108,000 lbs.

This twin unit, the largest in Australia, was hauling the "Overland" from Adelaide to Serviceton every night, coupling to the Up train and returning to Adelaide, arriving at 9.15 a.m. It would then proceed to Islington to refuel (pending completion of the Diesel Shed at Mile End Loco, now finished), and thence to Mile End Goods Yard to take out a Tailem Bend freight at approximately 10.00 a.m. It returned with an Up freight at 5.00 p.m., proceeded to Islington to refuel, then taking out the Down express again at 6.35 p.m. This process still continues, the third locomotive being used for freight service between Mile End and Tailem Bend.

Altogether, ten diesels are to be manufactured, all equipped with English Electric gear, and all are on six months' trial before being taken over completely by the S.A.R.—Yours, etc.,

N. G. SCANLAN.

St. Peters, S.A.

Diesel v. Steam — A New Aspect

The Editor,
Railways in Australia,
Dear Sir,

I note correspondence re "Diesel v. Steam". In a recent issue of the "Railway Gazette", an American correspondent's figures show that the quality of the diesel fuel deteriorated when large quantities were used by the railways. Also, the punctual running of the "20th Century Limited" dropped from 95 per cent. to 35 per cent. when diesel-hauled. The power output of the diesel suffered when quality fell, and the diesel was not so reliable.

I am in agreement with you when you say that lack of coal has forced the railways to use the diesel. (They will find oil at Exmouth Gulf, I feel sure.)

Mr. Boland is a great admirer of the Garratt, but he needs to be reminded that in this loco there are two engines, and long steam pipes with flexible joints. Yes, they will lift the load all right, but maintenance is high, and condensation is heavy. The fireman has to fire a deep, large firebox through a door which is at floor level, and he does not like it. However, I suppose this steam-diesel argument will go on as long as there are railways!—Yours, etc.,

RALPH KEAY

Bayswater, W.A.

FAN MAIL

J. PERRY, Essendon, Vic.—Much appreciated.
C. J. PITT, Mt. Gambier, S.A.—Thanks for item.
J. HENDERSON, Hurstville, N.S.W.- Thanks. Used last month.
N. SCANLAN, St. Peters, S.A.—Used this issue; thanks.
R. KEAY, Bayswater, W.A.—See remarks re subscriptions this issue. "Question Box" will look into signal problem.

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It is regretted that direct correspondence cannot be entertained.

Mr. John Lynch, of Essendon, Vic., asks for information on the J class locomotives being built for the Victorian Railways.

ANSWER: 60 P class locomotives are at present being built by the Vulcan Foundry, Newton-le-Willows, England, to a design prepared by Victorian Railways engineers. They will be 2-8-0's, somewhat similar in appearance to the present K class, but with German-type smoke deflectors; they will be oil-burners; and the boiler will be raised slightly to clear the frame and permit easy conversion to standard gauge. They are intended eventually to replace the D class on light lines, and the wheelbase is being kept short enough to allow them to be turned on the smaller country turntables. Road numbers will be J500 to J559. Some details of the design are as follows:

Cylinders (2), 20in. x 26in.
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Tractive effort (85 per cent.), 28,650 lb.
Grate area, 31 sq. ft.
Heating surface, 1,682 sq. ft.
Driving wheels, 4ft. 7 3/16in.
Total length, 60ft. 5½in.
Total wheelbase, 50ft. 8¾in.
Roadworthy weight:
  Engine, 66 t., 19 cwt.
  Tender, 46 t. 12 cwt.
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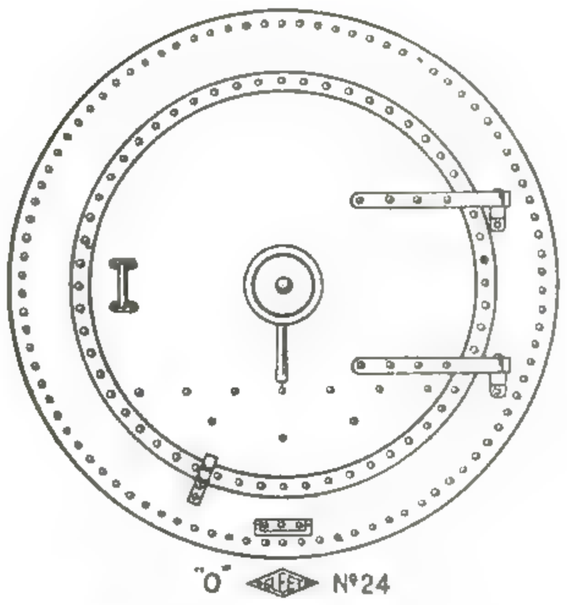

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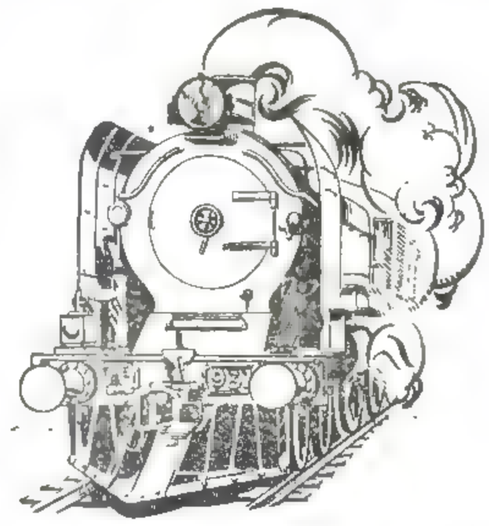

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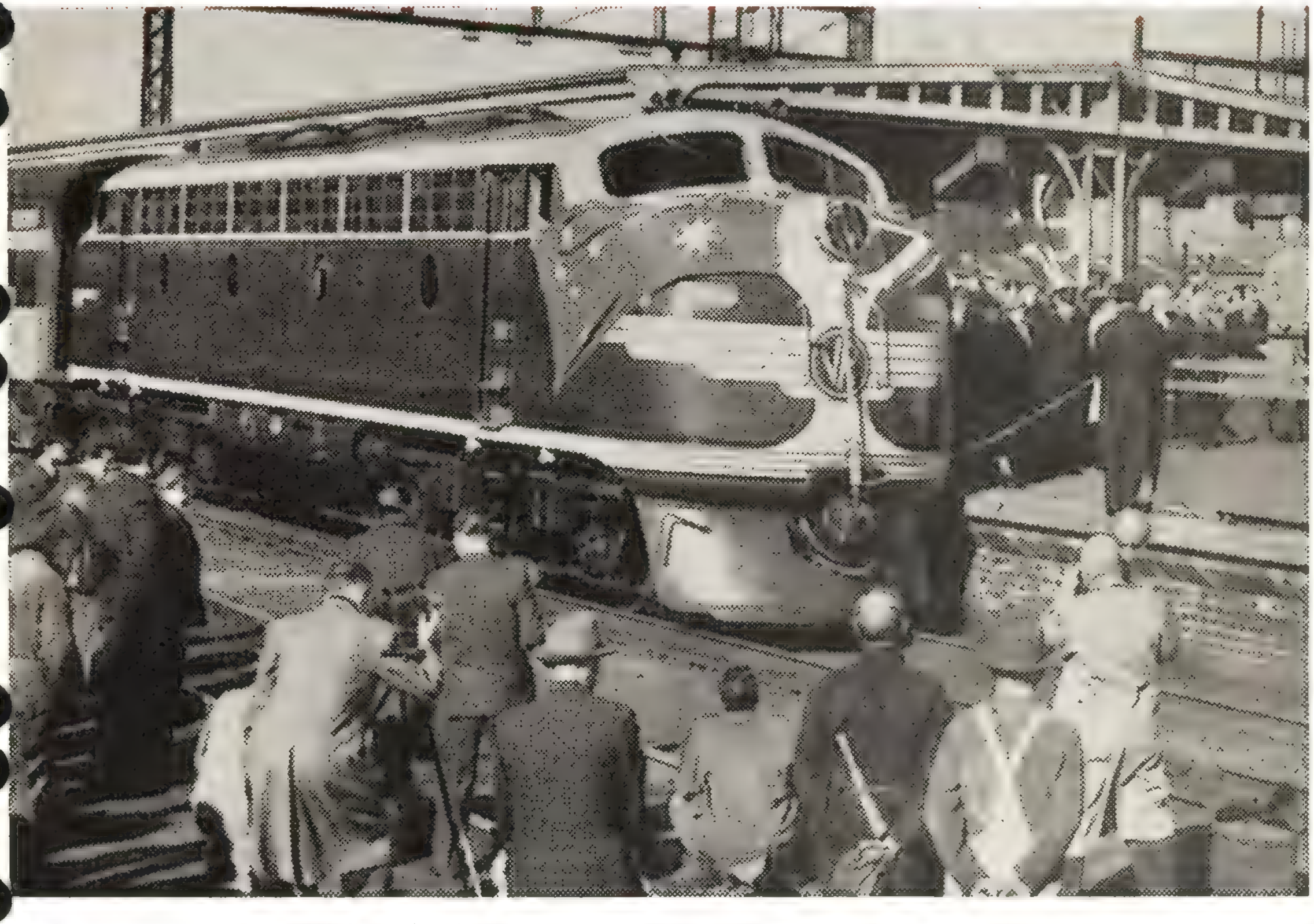
JUNE, 1952

The Magazine About Australian Trains



"Harold W. Clapp"—A Famous Name

IN THIS ISSUE

HOLIDAY BY RAIL — MAINLINE ELECTRIC LOCO
PASSENGER CAR CLASSIFICATION — NEW V.R. DIESEL

CHANGEOVER

New V.R. diesel-electric loco raised at one end to permit of exchanging trucks, at Bandiana, Vic. (See article on opposite page.) (Courtesy, Melbourne "Age.")

THE LARGE AMOUNT OF MAJOR NEWS PUBLISHED THIS MONTH HAS NECESSITATED THE ELIMINATION OF CERTAIN FEATURES AND THE RESTRICTION OF OTHERS, INCLUDING OUR GENERAL NEWS PAGES.

OUR COVER PICTURE

This month's cover shows the new diesel-electric locomotive of the Victorian Railways, No. 60, class B, at a naming ceremony at Spencer Street station, Melbourne. The new machine, a Co-Co type, and the first of 26 on order from the Clyde Engineering Co. Ltd., Sydney, was named "Harold W. Clapp".

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Railways in Australia

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A Word From Your Editor

Dear Readers,

Life is certainly exciting for Australian rail fans these da with new locomotives — steam, diesel and electric — appearing on almost every railway system in the country. Three n types are illustrated and described this month. I am getting letters from readers deprecating the amount of space devoted to diesels. Being an ardent steam enthusiast myself, I sympathize with this attitude, but, whether we like it or not, the diesel has come to stay. Better still, it has captured the imagination of the general public at a time when other forms of transport are being urged, on the assumption that railways are obsolete. Diesels cannot solve all, or even most, of problems confronting our railway systems, but they ha already enabled drastic cuts to be made in running time whi would not have been possible with steam locomotives wit extensive and costly track reconditioning. No doubt the tracks should have been reconditioned anyway, but with money short we have to consider things as they are, not as they ought to have been.

New South Wales has the honour of introducing the f runner of another competitor to steam power — the main electric locomotive, of which we shall be seeing many more ere long. Given sufficient traffic density these sometimes ugly, but always efficient, machines can do all that the diesel can do, and more cheaply.

However, steam enthusiasts can take heart from the fact that for every diesel and electric locomotive ordered, Australian railway systems have ordered several steam engines. Des all the publicity and glamour, attending the introduction the "growlers", no one is more aware than railwaymen the selves of the limitations of the new forms of power in country.

And no one is more anxious than myself to let you have as many pictures of steam locomotives as our restricted budget will allow. I am always glad to receive good, clear prints of locomotives for publication.

Yours sincerely,
JACK RICHARDSON, Managing Editor.

THE END OF THE HOLIDAY

With this issue, the marathon article by Mr. C. Einsiedel on his remarkable tour of the New South Wales Railways come a close. We make no apology for the length of this work has given a picture of detailed, day-to-day operation of our largest railway system in a manner unequalled elsewhere, and we only wish that it had been possible to illustrate the story adequately. Mr. Einsiedel was hesitant about submitting such a lengthy manuscript, but from letters received and from personal conversations, we know that readers have enjoyed it as much as we did when we first read it through. To author, who insisted that his reward was the pleasure of living his experiences, we extend our warmest thanks.

Sir Harold Clapp in the cab of the new diesel-electric locomotive which bears his name. Sir Harold, a former Commissioner of the Victorian Railways, was until recently Director of Rail Standardization in the Commonwealth Department of Transport. (Courtesy "The Age", Melbourne.)

FIRST LOCOMOTIVE TO RUN FROM SYDNEY TO MELBOURNE UNDER OWN POWER

V.R. Diesel Makes History

History was made early in July, when a new diesel electric locomotive on delivery from the Clyde Engineering Co. to the Victorian Railways hauled loads in revenue service over the entire distance from Sydney to Melbourne. The locomotive was V.R. No. 60, first of 26 new B class Co-Co machines on order.

Following trials on the New South Wales Railways, commencing with a run to Penrith, on the Western line, on Monday, 7th July, No. 60 left Enfield with a freight, on Thursday, 10th July, for Harden; after an overnight lay-over at Harden, the diesel continued to Albury on Friday.

On Saturday, No. 60 proceeded to Bandiana military sidings in Victoria. In addition to having mixed gauge trackage, these sidings are equipped with heavy lifting gear which was used in exchanging the 4 ft. 8½ in. trucks for the 5 ft. 3 in. pattern used on the Victorian Railways. An amusing sidelight took place during this operation. The weather was cold, and the lubrication in the V.R. trucks (which had not, of course, been run) had hardened, so that the tractor which was towing out the old trucks and towing in the new ones proved unequal to the task, and a steam loco had to be summoned from Wodonga!

On the following Monday, the new loco left Wodonga with a freight for Seymour. She had previously had a test run on the branch line as far as Barnawatha. At Seymour, amid barely suppressed excitement, No. 60 bade farewell to the freight and was attached to the Up Albury Express for a suitably spectacular arrival in Melbourne.

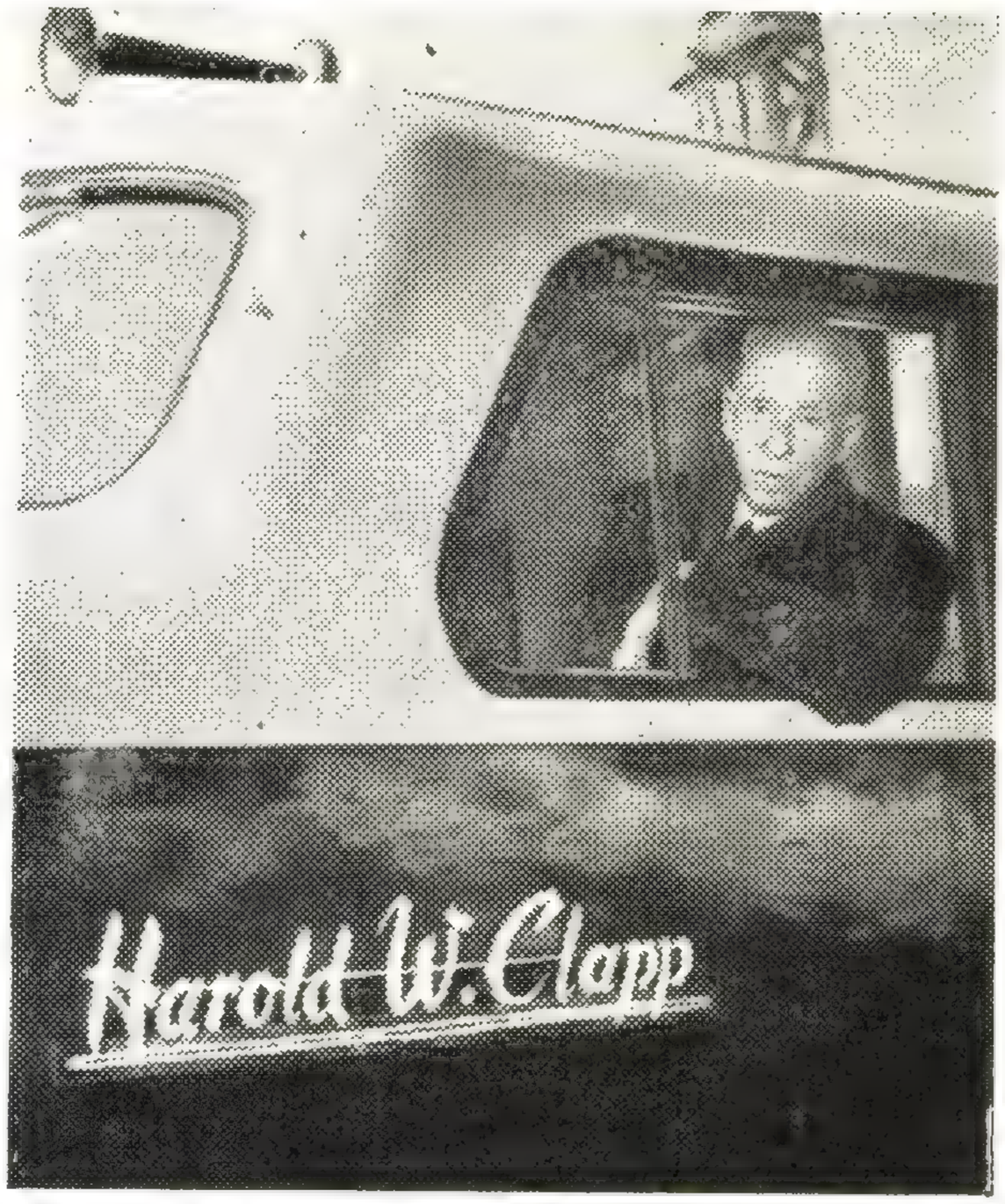
Driven by the Diesel Superintendent from the Clyde Engineering Co., No. 60 left Seymour 10 minutes late, but reached Wallan 10 minutes early! Instructions to "ease her down a bit" resulted in an arrival at Spencer Street 5 minutes ahead of the advertised 1.40 p.m. Cameras clicked, and the publicity boys made the most of the occasion.

Spectacular Test Run

Next day was the really great day in the life of the new locomotive. Five of the new AJ and BJ reclining chair cars from the Overland Express were made up into a special train, together with the venerable business car, "Norman," for a run to Seymour with railway "brass-hats," members of parliament, and other distinguished gentlemen. All sorts of reports are current concerning the speeds reached on the return journey, but it is quite clear that the official 70 m.p.h. maximum was generously exceeded. It had been intended to give the Special a clear road, but a signal check was experienced at one point. The fate of the signalman is not known!

Naming Ceremony

On returning to Melbourne, the new locomotive was christened "Harold W. Clapp," in honour of a former



Commissioner for Railways. The ceremony, which included the breaking of a bottle of champagne, was performed by the wife of the present Commissioner, Mr. R. G. Wishart.

Sir Harold Clapp, who recently retired from the position of Director of Rail Standardisation in the Commonwealth Department of Transport, was Commissioner for some years prior to 1939, when he was seconded to an important defence post. During his tenure of office, many of the most enterprising features of the Victorian Railways, including the "Spirit of Progress," were introduced.

Before settling down to a regular schedule, No. 60 carried out load tests on the severely-graded run to Ballarat via Bacchus Marsh. It is stated that, for the time being, the new diesel will make one round trip to Seymour, and one to Ararat, each day, on freight trains. The performance of this locomotive will be watched with interest. The remaining 25 engines of the class are expected to arrive fortnightly and, when all are in service, full or partial dieselisation will be the rule on the North-East, Goulburn Valley, Overland, and Port Fairy lines.

Striking Colour Scheme

The colour scheme of No. 60 and her sisters is a rich royal blue with a particularly striking design in orange-gold. This colour scheme will be used also on the new L class electric mainline locomotives now on order.

RAILS ACROSS THE BORDER

Break-of-Gauge Problem

Although through rail connection between Sydney and Melbourne has existed since 1883, the difference in gauge (N.S.W.R. 4 ft. 8½ in. and V.R. 5 ft. 3 in.) has prevented through running and interchange of rolling stock. Various proposals have been advanced for the construction of vehicles equipped with means for altering the spacing of the wheels, but safety con-

(Continued on page 14)

PRECURSOR

N.S.W.R. 40 class diesel-electric mixed-traffic locomotive No. 4001, first of twenty Alco-G.E. machines built in Canada recently.. Two of these locomotives took part in the test run to and from Brisbane described on this page. Of 1600 h.p. each, the 40 class are of the A1A-A1A wheel arrangement, and can negotiate 3½ - chain curves. Although not particularly pleasing in appearance, the design permits ease of maintenance through greater accessibility of working parts. (Courtesy, "Electrical Engineer.")

STRIKING TEST RUNS WITH NEW N.S.W.R. DIESELS
Passenger and Freight

By H. J. Wright

On Sunday, 15th June, a trial run was made with two of the new 40 class diesel-electric locomotives of the New South Wales Railways from Sydney, N.S.W., to Brisbane, Qld., on No. 1 Brisbane Limited Express.

The Limited on this occasion was hauled by Nos. 4020, leading, and 4019, the former being specially fitted with Automatic Staff Exchange apparatus. These units departed from Sydney under the hand of Driver W. (Bill) Naptholi, of Eveleigh, accompanied by the Diesel Locomotive Superintendent, Mr. W. K. Johnson.

The train was made up as follows, from the head: MHO van 1873 (42), DMC dynamometer car 1902 (40), MFE 2nd class car 2108 (50), RBX 1st class and buffet 82 (48), TAM sleeping cars 1882, 1885, 1883 (49 each), SG State Governor's car (51), AAH Commissioners' cars 7, 8, 9 (55, 45, 45), AK Testing Engineer's car 417 (24), total weight 547 tons. Length of the train, including the two locomotives, was 960 feet. MHO 1873 was specially fitted with an automatic coupling at the leading end to enable the diesels to couple to the train.

(Figures in brackets in the above paragraph are tons.)

The train left Sydney at the usual Sunday evening departure time of 6.30, and was tabled into South Brisbane Interstate platform at 10.40 the following morning. The distance is 613 miles. Stops were scheduled to be made at Hornsby (21 miles), 7.09-11, pick up Interstate passengers, Gosford (50¼ miles) 7.56-8.06, refreshments (the RBX not being manned by buffet staff until South Grafton), Broadmeadow (101¼ miles) 9.14-21, pick up Interstate passengers, loco requirements, Taree (235¼ miles) 12.52-57 a.m., loco requirements, Coff's Harbour (377¾ miles) 4.24-26, pick up passengers, South Grafton (432¼ miles), 5.49-54, loco requirements, Casino (500¼ miles) 7.30-55, refreshments, Bromelton, Q. (575¼ miles) 9.45-7, set down passengers, South Brisbane (613) arrive 10.40 a.m.

Thus, the 16 hours 10 minutes was scheduled to be occupied by 57 minutes standing time, and 15 hours 13 minutes running time, representing an average speed of 40.15 m.p.h.

The normal schedule for No. 1 Limited on Sunday evening, worked throughout by 36 class 4-6-0 engine (sometimes 38 class Pacific between Sydney and Broadmeadow) with at least one MLV (express louvred van) of mails and perishables, MHO brake van, 2nd class car, 1st class and buffet car, and three sleeping cars, total 309-337 tons, provides for stops at Hornsby 7.09-11, Broadmeadow 9.12-21, Maitland 9.50-5, Dungog 10.51-59, Taree 1.31-39, Kempsey 3.52-4.02, Coff's Harbour 5.48-58, South Grafton 7.29-53 (refreshment stop), Casino 9.48-10.01 (refreshment stop), Bromelton 12.17-18, Greenbank 12.48-53 (cross No. 4 Up Express), and arrive South Brisbane at 1.25 p.m. This schedule allows for 1 hour 35 minutes standing time, and 17 hours 20 minutes running time, at an average speed of 35.25 m.p.h.

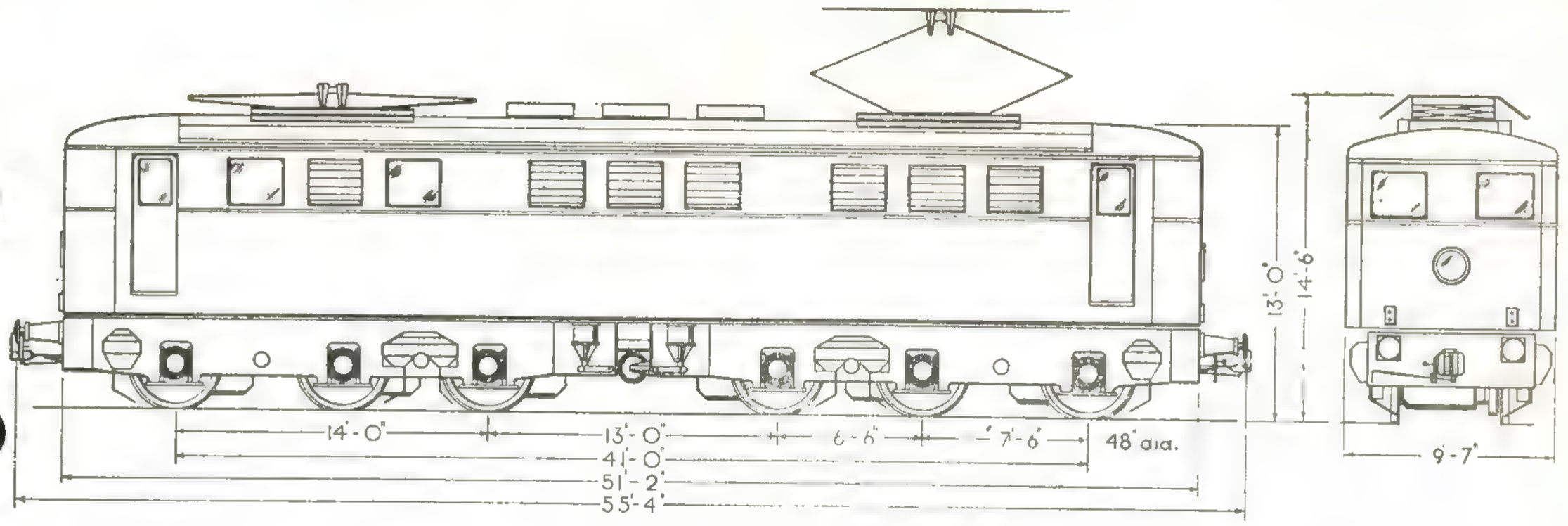
Express Freight Runs

On their return journey, the diesel-electrics were scheduled to work No. N278 Special Fruit Express, timed to convey a maximum load of 1100 tons. The train was to be composed of MHO 1873 leading, the DMC 1902, followed by LLV (louvred), TRC (refrigerated), MAC (refrigerated), and MLV (louvred) type cars fitted with passenger-type bogies, and a bogie brake van.

The schedule for N278 provided for a departure from South Brisbane at 6.40 p.m. on Tuesday, 17th, with stops at Casino 10.25-55, South Grafton 1.09-24, Kempsey 5.12-28 (cross No. 1 Limited), Kundabung 5.53-6 (cross No. 3 Express), Telegraph Point 6.16-21 (cross No. 11 North Coast Mail), Kendall 7.11-24 (cross No. 15 Kempsey Mail), Taree 8.32-37, Monkerai 11.28-49 (cross No. 27 North Coast Daylight Express), Kilbride 12.31-37 p.m. (cross No. 5 Kempsey Passenger), Broadmeadow Yard 1.53-2.20, Wyong 3.33-4 (overtaken by No. 10 Tamworth Passenger), Hawkesbury 4.52-55 (attach push-up), Cowan 5.16-18 detach push-up), and finally, arrive Darling Harbour Goods Yard at 6.36 p.m., four minutes short of a 24-hour journey.

N278 was allowed 2 hours 55 minutes standing time and 21 hours 1 minute running time, representing an average running speed of 27.75 m.p.h.

It is hoped that in the very near future No. 1 Brisbane Limited Express will be worked entirely by diesel-electric units on an even faster table than that of the test train.



N.S.W.R. mainline electric locomotive No. 4501—See story this issue.

AUSTRALIA'S FIRST MAINLINE ELECTRIC LOCOMOTIVE

N.S.W.R. 2700 h.p. Unit Tested Successfully

The past few weeks have been among the most eventful in the history of Australian railways, at least in the field of motive power. Not the least of the striking new developments witnessed has been the introduction on the New South Wales Railways of the first mainline electric locomotive to see service in this country. This was No. 4501, a Co-Co type.

Some may point to the twelve Bo-Bo locomotives of the Victorian Railways, but these are intended purely for suburban freight working, whereas No. 4501 is definitely a mainline hauler.

The forerunner of 40 larger machines intended for heavy passenger and freight hauls across the steeply-graded Blue Mountains from Sydney to Lithgow and Wallerawang, No. 4501 was constructed at the Chullora Electric Car Shops ("Elcar") of the N.S.W.R., and is being used in suburban freight service to Hornsby to provide data and experience for drivers.

The first trial, from Chullora to Liverpool and return, was made on 19th June last, and the new loco is reported to have attained a speed of 75 m.p.h. on this occasion.

On a second trial, held on Wednesday, 2nd July, No. 4501 proceeded from Flemington Car Sidings to Wynyard (Low Level) underground station on the City Railway. Here it was boarded by the Commissioner for Railways and departmental heads; subsequently to Hornsby via Strathfield. On this trip, between North Strathfield and West Ryde, 75 m.p.h. was again reached. From Hornsby No. 4501 returned to the city via the North Shore line and the Harbour Bridge, thence back to Flemington.

The following day a further trial was made, this time with a 400-ton freight train from North Strathfield to Hornsby. No trouble whatever was experienced, the train stopping and restarting easily on the steepest gradient (near Denistone). A further trial was to be made with a 600-ton load, which is the maximum for a 57 or 58 class steam engine over this section.

It is anticipated that No. 4501 will continue to work to Hornsby until the electrification of the Western line to Wallerawang is advanced sufficiently to permit its use there.

(Continued on page 14)

FIRST IN AUSTRALIA

Electric express passenger and freight locomotive of the New South Wales Railways. No. 4501, an experimental Co-Co type, was built at the N.S.W.R. Chullora Shops, and is being used to gain experience in operating mainline electric locomotives. A total of 40 similar machines is on order from Great Britain. Noel Read snapped No. 4501 in No. 17 Platform, Central Station, Sydney, on her second trial trip on 2/7/52.

The length of this locomotive, which is not apparent in the photo, will be seen in the diagram elsewhere in this issue.

BN class passenger car, a 1st class car for tourist traffic, placed in service in 1939. As mentioned in Mr. Clark's article, these all-steel cars are operated in close-coupled sets. (N.S.W.R. Official Photo.)

PASSENGER CAR CLASSIFICATION

Coding of Steam-hauled Stock, N.S.W.R.

By L. A. Clark.

New South Wales passenger stock is coded by a method which uses a maximum of three letters and, to a casual observer, these appear to have been selected at random. A closer examination, however, reveals that an attempt has been made to develop a regular and consistent system which, in actual fact, falls far short of perfection.

The codes for sleeping cars and combination sleeping and sitting cars contain the letters "A", as in AM, EAM, FAM, LAM, VAM, MAM, TAM; composite sleeping cars CAM and KAM, and composite branch line sleepers ACM and ACX. The combination "AM" indicates that the "Mann" or transverse sleeping compartments are fitted, in contradistinction to Pullman berths. The letter "A" is also used for Dining Car No. 90, AB and certain special coaches not used by the public.

The basic letter for first class is "B," and all cars except sleeping, whose accommodation is solely first class, contain the letter "B" in their classification, either in first position, as in:—BB, BH, BI, BJ, BL, BN, BR, BS, BV, BX and BVX, or in second place as in:—HBB, HBI, LBB, MBE, MBX, OBS, RBH, RBR, RBX, SBR, SBS, SBX, TBC.

Those carriages which have accommodation for both first and second class, and which are known as composites, have as their identifying code the letter "C", as in CK, CR, CX, CCA, MCX, MCE, CBC, CVX, HCV, HCX.

By far the largest group is that which comprises second class cars, and these have, with certain exceptions mentioned later, the letter "F" for their deciding code classification. Their codes are:— FA, FG, FH, FJ, FK, FL, FN, FO, FR, FS, CFX, FVX, HFA, HFH, HFL, HFN, HFO, HFV, LFA, LFX, MFE, MFX, OFS, RFH, RFL, RFM, RFN, RFR, RFV, RFX, SFS, SFX, and TFX.

The first letter in the code for passenger cars containing a guard's compartment is "H", as in HBB, HBI, HCV, HCX, HFA, HFH, HFL, HFN, HFO, and HFV. Brakevans have the basic combination "HO". Examples are:—HO, CHO, EHO, MHO, SHO, VHO, also HP, a guard's van with provision for the conveyance of pigeons. The combined power and brakevan of the RUB air-conditioned sets is coded PHS.

Mail and baggage vans have "K" as their identifying code letter, as follows:—KB, KL, KP, HKB, and HKP. The two latter have guard's compartments and may be used as passenger brakevans in an emergency. The letter "K" is also used for the coding of prison vans, horse boxes, motor car trucks and hearses, which, although not passenger vehicles, are conveyed by passenger trains and are classified as Coaching-stock.

When an "R" occurs in first position in a three letter code, it is an indication that the vehicle concerned is equipped with a refreshment buffet. Typical codes are:—RBR, RBX, RFL, RFR, RFV, RFX, and RHX. The cafeteria car in the air-conditioned sets is coded RS.

From the foregoing it will be seen that "A" denotes sleeping and certain special cars, "B", first class; "C", composite; "F", second class; "H", brakevan or car with guard's compartment; "R", buffet car; and "K" mail vans or certain other vehicles.

Presumably, one of the main purposes of coding, is to convey to the staff, and other interested persons, an idea of the type of vehicle and also to indicate the class of accommodation provided by it, yet there are at least four codes which do not fulfil this latter requirement, and still another with a guard's compartment but with nothing in its code to say so. Fortunately, the number of vehicles coming within these categories does not exceed 30, with the HR accounting for 10. These are 2nd class side corridor cars with guards' compartments and form the terminal vehicles of close-coupled sets of "R" type cars. The complete code should be HFR, and it is not clear why the "F" has been omitted. Next in order of importance comes the RHX (three in service), which is a clerestory roofed centre aisle tourist car containing a refreshment buffet and guard's compartment. It is 2nd class but lacks the letter "F" to complete the code. Then there is the HS, a "box" carriage containing 1st and 2nd class seats and a guard's compartment. A more consistent code would be HCS, and indeed, it could well be classed with the HCX, from which it differs only in the number of passenger compartments. The remaining example of this kind of irregularity is to be found in the 2nd class clerestory roofed centre aisle tourist car coded HCR (only one in service) instead of HFX. The CCA is an example of a different sort. It is an American suburban car with 1st and 2nd class portions and guard's compartment, for which a more appropriate code would be HCA. Another variety of inconsistency occurs when the 1st and 2nd class versions of the same type of car have different code endings, as in CFX and TFX, with similar type cars in first class coded CBX and TBC instead of the more logical CBX and TBX.

Then there are FA and FO with first class counterparts coded BB and BI. Lastly there is the peculiar instance of the BX and LFX, which are "box" carriages and among the most notorious on the system. To be consistent, the LFX should be simply "FX", but this apparent irregularity may be explained by the fact that at one time there were FX cars having no lavatories. Later a similar car was placed in service with lavatory accommodation and coded LFX. For some years both classes were in use, but eventually the FX's were converted to other types and the class has long since disappeared.

American type centre aisle, end platform, cars form a large percentage of those in use on the N.S.W.G.R., and, with the exception of four sets, are of practically identical appearance externally, the chief points of difference being the style of wooden panelling and whether the roof is of the Mansard or semi-elliptical type. Internally, however, they differ in many respects, and such factors as dwarf partitions, reversibility of seats, lavatories and guards' compartments are responsible for the large variety of codings, which are:—First class, BI, BB, HBB, LBB; second class, FA, FO, HFA, HFO, HLF, LFA; composite, CCA. Strangely enough the code letters are not displayed on any of these cars except a few loose or independent ones; neither are the class designations shown on the 2nd class carriages.

Since 1929, each new car type has been allotted a letter which definitely denotes its type, and this appears as the last letter of the code. Those coming under this heading are the E, G, H, L, N, R, S, SS, and V, and the groups comprise:—"E"; MBE and MFE, converted from MBX and MFX. G; FG. "H"; BH, FH, RBH, RFH, and HFH, air-conditioned cars. "L"; BL, RL, RFL, and HFL. Many of these are run in close-coupled sets (referred to later), and are converted from obsolete types AJ, BI, FO, HFE, HFX, CFE, HFO, BC, and CCX. "N"; BN, FN, RFN, and HFN, new cars built in 1939. "R"; with type from which converted shown in brackets; BR (BX, CX), CR (CX), FR, RBR, HR, and HR (LFX). It is to be noted that 6 HR's are conversions from BC's. "S"; BS and FS, steel cars built 1935-1937. "SS"; SBS, SFS, OFS, OBS, RS, and PHS, air-conditioned cars. "V"; BV, HCV, RFV, and HFV, converted from MCX and MFX and used for some years exclusively on the Newcastle Express trains.

Extensive use has been made in the past of the code letter "X", and it can be safely assumed that it indicated "express", as distinct from "Redfern" and other coaching stock in use on the slower trains, and, at the time it was introduced, the "express" type of coach was the then new standard side door compartment (or box) stock. Now, however, it is of little value as a means of providing an indication of the type of coach, as it is applied to a wide variety, differing in size, usage and appearance, and might well be recognised as the unknown quantity as far as coding is concerned. With the exception of BX and CX, the codes are all three letter ones, and it is the first and sometimes the second letter which indicates the type of coach.

It has long been the custom in New South Wales to operate trains consisting of permanently close-coupled sets of cars, but prior to the electrification of the Sydney suburban lines in 1926-30, the sets consisted entirely of American type suburban cars, which worked the steam suburban services of Sydney and Newcastle. At week-ends and holiday periods some of these sets were run to the closer tourist resorts, but it was not until the Sydney suburban electrification that most of them were fitted with lavatories and had their seating altered for use on country trains. Set codes are:—8 cars, LUB; 6 cars, LOB; 4 cars, LAB. Two sets, Nos. 75 and 76, have their end platforms enclosed and are fitted with vestibules, and their code is VUB.

In 1929 the "L" group of coaches was introduced, being conversions or really rebuilds (as the only parts of the old carriages used were the underframes and bogies, roofs and, in some cases, portions of the floor) from older types, as mentioned previously, and were close-coupled in sets of six, vestibuled, comprising:—HFL, BL, BL, RFL, FL, and HFL, and coded CUB. There are also many independent BL, FL, and HFL's, but the RFL's are restricted to those included in the CUB sets.

The year 1931 saw the introduction of the "R" cars. As with the "L's" the first batch to be converted were close-coupled in sets of six, vestibuled, comprising:—HR, BR, RBR, FR, FR, HR, and coded SUB. Later, 4-car sets arranged FR, FR, BR, FR, were brought into use and subsequently some of these were strengthened by the addition of an RBR or RFR. To-day the set codes vary according to the number of cars, and are as follows:—4 cars, SIB; 5 cars, SAB; 6 cars, SEB; 10 cars, SOB. There is only one 10-car set, No. 102, "The Fish", Blue Mountains business train. Set No. 108 can be run either with 5, 6 or 7 cars, but the code SUB does not vary.

The practice of operating close-coupled sets on country trains having been thus firmly established, a new centre aisle steel tourist car was introduced in 1939 with the basic code letter "N" and assembled into six and seven car sets, arranged:—HFN, FN, FN, BN, BN, HFN. The 7-car sets had an additional FN in their composition. Since then the RFN has been substituted for one of the FN's and the codes to-day are:—5 cars, NOB; 6 cars, NAB; 7 cars, NIB. There is also one set, numbered No. 115, consisting of four cars, uncoded, which, at the present time, forms part of the second division of the "Fish" and which soon earned the inevitable title of "The Chips", but not, as yet, officially.

The two sets numbered 77 and 78, used for some years exclusively to work the Newcastle express trains, are identical in all respects and consist of "V" type cars, specially converted from MCX and MFX. The sets are composed of:—HCV, BV, RFV, and HFV, and their present-day code is NCR. Before the two above-mentioned sets took over the working of the Newcastle expresses, three sets of clerestory roofed ex-Pullman sleepers were rostered to these services from December, 1934, to April, 1939, and were composed of:—CVX, BVX, RHX, and FVX, and numbered 87-89. Sets 87 and 88 were coded ICE and NCL respectively, whilst set 89—uncoded—was used as a standby. These sets are still in service with 4-wheel instead of 6-wheel bogies, and are coded NCL.

During the late war, six bogie horse boxes with a length over bodies of 50 ft. 6 in., which were considered redundant, were stripped to their underframes, rebuilt as tourist cars, and coded FG. Up to the present time there have been no 1st class cars of the "G" type.

The most recently constructed coaches are, of course, those forming the air-conditioned sets, the first of which were the "H" class, consisting of:—BH, FH, RBH, RFH, HFH, and PFH. There are four such sets in use and the marshalling is:—HFH, RFH, BH, BH, RBH, FH, PFH, the set code being HUB. The PFH, not mentioned previously, contains the diesel engine and generator for supplying power for lighting and air-conditioning, together with a guard's compartment and 2nd class saloon. The six later air-conditioned sets of "SS" cars are coded RUB and consist of:—SBS, SBS, RS, OFS (or OBS), SFS, SFS, SFS, and PHS. The last-mentioned vehicle is the combined power van and guard's van without passenger accommodation.

Suburban close-coupled sets are coded BAB, BEB, BIB, BOB, or BUB, according to the number and type of cars in the set.

25 MILES TO GO!

No. 18 Up Brisbane Express (via Wallangarra) near Berowra, having surmounted the Cowan [illegible] mentioned in Mr. Einsiedel's article. Streamlined 38 class Pacific, No. 3805, was hauling this train when Ken Winney snapped her in March, 1948. Note the automatic, upper-quadrant semaphore, typical of N.S.W.R. practice on country lines.

HOLIDAY BY RAIL

By C. EINSIEDEL

(Continued)

In this final instalment of his account of three weeks of rail travel, Mr. Einsiedel makes a dramatic farewell to the N.S.W.R. with a 700-mile journey to Broken Hill in the Far West of New South Wales. Two short journeys from Sydney, and the cross-country connections from Broken Hill to Albury, add to the interest.

The journey over the Victorian Railways to his home at Monomeith makes an interesting contrast.

A run to East Hills (15 miles) by electric train on the Monday morning was followed in the afternoon by a second trip to Newcastle on the "Flyer", leaving Sydney at 12.50 p.m. Engine 3819 had the standard load of seven cars (292 tons) and, after getting away a minute late, was diverted to the through electric line. A signal stop at Burwood, and a stop of one-and-a-half minutes at Strathfield meant leaving there 3½ minutes behind schedule. After reaching the Main Northern line via the Strathfield flyover, this deficit was reduced, leaving Hornsby by the 22 seconds saved at the brief stop there. However, by Hawkesbury River, the time lag had been improved to 1½ minutes, and further, to half a minute passing Wyong. Thence to the stop at Broadmeadow, almost half a minute early, the gain was gradual. A stop of a minute and a half at Hamilton resulted in an on-time departure, but, as on a previous run, the four minutes allowed for the 2¼ miles into Newcastle proved inadequate, the arrival being 90 seconds later than the booked 3.20 p.m.

The same train returned to Sydney as the 4.50 p.m. "Flyer", this time with 3823. Along with three of the other four occupants of the compartment into which I had been booked, I was able to change to the saloon—some evidence of the popularity of the open-type seating. Departure was 1½ minutes late, reduced to 40 seconds on leaving Broadmeadow, thanks to the liberal timing of 7½ minutes for the 3¼ miles. 2½ minutes late passing Ourimbah, the train was on time at Hawkesbury River, and ahead of it after climbing the long gradient to Cowan. The 20 miles between mileposts 73 and 53 were run in 20 min. 33 sec. On a previous trip the same distance was covered in a minute less. Signal checks brought a 2-minute late arrival at Sydney.

Two shorter runs were selected for the next day—Wollongong to Moss Vale, and Mittagong to Picton via the Loop Line, returning to Sydney in time for the Forbes Mail. Leaving on the 8.45 a.m. "South Coast Daylight" Express, I arrived at Wollongong 4 minutes late, at 10.37 a.m. Here I transferred to a short train of two old end-platform cars headed by a 4-6-4 tank, No. 3079. Departing at 10.56, the main line was followed for 3¼ miles to the junction at Unanderra, after which the steep grades commence. In the next 11½ miles, to the end of the 1 in 30 grades, there is a rise of 1,830 feet! Nowhere else in the State is there such a rise in the distance. There are two tunnels and in one place there is a concrete roof over the track to divert falls of rock in wet weather from the towering sides of the precipice above. At times the line has to be closed for days while debris is cleared. Engine requirements took 5 minutes at Summit Tank, where the arrival was 2 minutes early. After a couple of miles of easy track, there is a rising grade of 1 in 60 for eight miles to Ranelagh, 2,471 feet above sea level except for two ¼-mile easements. The cool mountain air in these parts was a welcome relief from the humid conditions of the previous seven days. Curvature, which is down to 10 chains radius, and almost continuous, eases about ten miles from Moss Vale, when the track runs over undulating country. Running slipped somewhat, and the arrival at Moss Vale was 8 minutes late, at 1.13 p.m., but in plenty of time for the 9.45 a.m. from Sydney, with which the train connected.

This trip was planned for Tuesday as, on that day, the Down railmotor from Picton via the Loop Line extended from Mittagong to Bowral. There is no connecting train from Moss Vale at this time, so I travelled by a local bus—the only weak link in the whole tour! While waiting at Bowral I saw an oil-burning 55 (2-8-0 freight engine) pass through—the only sight of a conversion in N.S.W.

Five miles from Mittagong, along the Loop Line, the grade falls for the next 19½ miles to Picton, except for a few, short, level stretches. From Hill Top, the drop is 1,410 feet in 15 miles to the junction with the main line a mile outside Picton. Small wonder that a new survey was made between Picton and Mittagong. Between Braemar and Hill Top on the old line, Down trains are faced with a mile at 1 in 33, followed by [illegible] miles at 1 in 30. The extra three miles in the present main line help to provide a ruling grade of 1 in 75.

The Motor Guard worked the points and signal at the unattended junction box just outside Mittagong and thereafter running was easy all the way to Picton (in contrast to the Down direction), the arrival being on time at 5.09 p.m. The connection here was with the 9.32 a.m. from Cootamundra—another oddly-timed departure. This was running on time, headed by 36[illegible], and came into view on the hillside three minutes before

arriving via the necessarily circuitous route. Campbelltown, beginning of the suburban area, was left 4 minutes early, and despite severe signal checks, the arrival at Central was only one minute late, at 7.06 p.m. The checks were mostly experienced between Cabramatta and Lidcombe—probably the worst section for signal checks to country trains in the metropolitan area.

Homeward—via Broken Hill.

Just over an hour later, I commenced a circuitous homeward journey with a trip to Broken Hill, leaving by the 8.30 p.m. Forbes Mail and changing to the "Silver City Comet" at Parkes. The train consisted of No. 3615 in front of five sitting cars, two sleepers, and an MHO van, with an MLV louvre car bringing up the rear. The latter was loaded with van goods for the "Comet". A minute late starting and passing Penrith at 9.33 p.m., the train, when I awoke next morning, was toiling up a continuous 1 in 60 grade round almost continuous curves, on the western slopes of the Divide between Jeerabung (247 miles) and Bumberry, the time lag having increased to 13 minutes. My only experience of change-in-direction running on N.S.W. lines occurred on this trip overnight, owing to the junction at Orange being on the Up side of the station. The 7.45 a.m. arrival at Parkes (276¾ miles) was 15 minutes late, but the 65 minutes allowed here provided plenty of opportunity for observation, in addition to a good breakfast in the refreshment room. Parkes is quite a busy place after the arrival of the "Mail", as, in addition to its departure for Forbes, trains are despatched to Condobolin, Broken Hill, Bogan Gate and Tottenham, Peak Hill and Narromine. There is much transferring of van goods, that for the "Comet" being handled right across the platform to the diesel train waiting opposite in a bay at the Down end. On account of the time taken to load the "Comet", the railmotor to Condobolin, stopping at all stations, leaves 45 minutes ahead of the Broken Hill train; the latter, stopping only at Bogan Gate, makes up all but 12 minutes of the leeway.

Only two minutes were saved at Parkes and, soon after leaving at 8.48 a.m., the country had flattened out, and the "Comet", allowed a maximum of 70 m.p.h., was soon showing its paces. This is the fastest-timed train in N.S.W., and, with 26 stops in 422 miles, averages just over 43 m.p.h. Curves and grades give little or no trouble, and there are many long straight sections: the two longest, 46¾ miles and 45½ miles, are separated by a curve of 100 chains radius, 10 chains in length, and about 1½ miles on the Up side of Ivanhoe (507 miles).

The schedule proved to be within the compass of the train as, on the run, after two severe slowings for re-sleepering work, a signal stop, and 24 other stops, including four at workmen's camps, 19 minutes were gained. Leaving Eubolong West, 108 miles from Parkes, at 11.22 a.m., the train was only 5 minutes late, and from there to Conoble, 99 miles further on, was the fastest stretch. Intermediate mileages and start-to-stop times were as follows: Eubolong West-Matakana (23¾ miles) 30 min.; Matakana-Roto (25¾ miles) 27 min.; Roto-Trida (26¾ miles) 29½ min.; Trida-Conoble (17¾ miles) 21 min. Seven minutes were gained, despite stops at each station, aggregating 12½ minutes.

At Menindie (625½ miles), where the Darling is crossed, altitude is down to 204 feet—little enough fall for its 500-mile journey to the sea. Thirty miles further on there is a 2-mile stretch of level track, the longest on the run, which is surprising, considering the miles upon miles of seemingly flat country. At this point, height above sea level is 360 feet and, in the next 43 miles to the terminus, there is a gradual rise of 624 feet, with grades no worse than 1 in 150. However, curves restrict speeds over the last 17 miles from The Gorge, at the entrance to the Barrier Range.

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Central Australian time is used west from Menindie, which made the arrival at Broken Hill, 698½ miles from Sydney, 6 minutes ahead of time at 5.44 p.m., bringing comments that the train was early.

Coming back the next morning, I met "D.S. Orange" (District Superintendent), my railway interest being rewarded with a ride at the front end for almost an hour. I learnt that the drivers are stationed at Ivanhoe, taking over there in each direction, and bringing the train back the following day.

I left the "Comet" at Roto (where it was 15 minutes late), taking the 3.15 p.m. railmotor to Griffith. Getting away at 3.33 p.m., and rarely exceeding 40 m.p.h., time had almost been regained after 42 miles, at Merriwagga. There was a delay of 13 minutes at the signal outside Griffith waiting for a Goods to clear the platform road, but the arrival there was only a minute late at 6.53 p.m. The motor continued on to Narrandera at 7.45 p.m., but I stayed at Griffith overnight, and resumed next morning on the 6.55 a.m. railmotor. It left eight minutes late, yet arrived at its terminus four minutes early. Connection from Narrandera to Junee was by the 9.01 a.m., which consisted of two cars and an EHO van hauled by No. 3001 (a light 4-6-0). After 21 miles, at Matong, the train ran straight into No. 2 road to cross the South-West Mail. Departure, and the subsequent arrival at Junee, were six minutes late, the latter at 11.17 a.m.

Instead of waiting until 4.47 p.m. for the Down "Riverina", I boarded its Up counterpart, headed by 3804, and went as far as Harden—once again just for the ride (although the attraction of a second look at the Bethungra Spiral was sufficient). I feel that this work justifies a descriptive announcement over the train speaker system. This would be of interest to the many interstate travellers who, since the inauguration of the new "Riverina" expresses, stay overnight at Albury to travel by these trains.

It was obvious that many passengers were intrigued by the changes of direction, and the many views of the work from continually changing angles on both sides

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of the train. Speeds were slower than on my previous run over this section; towards the top of the spiral only 14½ m.p.h. was made.

An interesting feature of the wartime duplication between Cootamundra and Junee is that an old 1 in 40 formation of about three miles was used for the new Down track on the Up side of Frampton; this had been abandoned about 30 years ago, when a new 1 in 75 deviation was built. The latter is now the Up line, the tracks being as much as ¼-mile apart. The Down line, with the 1 in 40 downhill, is nearly two miles shorter, the Up line taking the spiral.

The train left Cootamundra nearly three minutes late, and exceeded the time allowed at the Demondrille Coal Stage by three minutes, yet arrived only half-a-minute behind schedule. Incidentally, while waiting at "Coota" I had my only close-up of a 57 class 4-8-2 when one came in on a Down Goods. Outward appearance is strictly utilitarian. On this loco., the uneven beat of the exhaust, and wheel-slipping each time a shunting movement was made, indicated that the valve timing needed adjustment.

The Down "Riverina", headed by 3814, was away from Harden 15 seconds early and, after nearly 12 minutes in the siding at Demondrille, was three minutes ahead at Cootamundra, and the rest of the run to Albury was very close to the booked time. The 3¼-mile run down the Bethungra bank on 1 in 49, 40, and 45 grades, dropping 360 feet, occupied 5 min. 2 sec., about half the time for the longer journey around the spiral on the Up run. A couple of severe slowings for bridgework between Gerogery and Table Top caused the Albury arrival to be 90 seconds later than the scheduled 7.25 p.m. The new bridges are built to carry double track, the existing line becoming the Down should duplication eventuate.

So ended 6,584 miles of travel in New South Wales. It worked out at less than a penny a mile, which is pretty cheap for 1st class travel these days, if one can take it in large doses! Needless to say, I enjoyed it all, but I still think something more informative should be stamped on an All-Lines ticket in place of the existing "City, All Lines, via Bridge, via Strathfield".

Back in Victoria.

Next morning I was back in Victoria with what, to me, will always be a tit-bit—a ride on the "Spirit of Progress". The N.S.W.R. Down trains were late in arriving at Albury, the Limited not getting in until 8.02 a.m.—32 minutes late. On the "Spirit", Driver Farelly was in charge of S class Pacific No. 301, "Sir Thomas Mitchell" with what can now be considered the regular load—547 tons, comprising, from the front, CS van, three BS 2nd class cars, dining car, five AS 1st class cars, and the Parlour Car. It was Derby Day at Flemington, and there were many on board without seats, as it was not expected that the following "Albury Express" would reach Melbourne before 2.10 p.m.

The departure, at 8.22 a.m., was 32 minutes late and, with the 3 hr. 40 min. timing for the 190¼ miles (10 minutes less than the Down train), there is little scope for gaining on the schedule, with a speed limit of 70 m.p.h. After passing Wodonga (187 miles from Melbourne) in the 7½ minutes allowed, speed was up to 60 m.p.h. seven miles further on, but, with slight rising grades for the next ten miles, most of the last two of this at 1 in 75, nothing better was possible until after topping the Chiltern bank at milepost 170, where speed was down to 28½ m.p.h. Activity soon livened up, however, on the compensating grade on the other side, and the limit was being approached passing through Chiltern (168½ miles) and, except for a short distance through Wangaratta, even time was maintained to milepost 141, after which the approach to Potter's Range at Glenrowan (136 miles) was commenced. This involves a rise of 240 feet in five miles, with a grade of 1 in 75 over the last 2½ miles; at the top, speed had again dropped below 30 m.p.h. At this stage, the loss on the schedule was 1 min. 28 sec., but the run down the bank on the south side was a good entry into the "speedway", and the time of 60 min. 25 sec. for the 63 miles from milepost 135 to Avenel (72 miles), shows what is needed to keep the schedule. At the latter station, the train was only 21 seconds early, a gain of 1 min. 49 sec. from Glenrowan.

Approaching Mangalore (68 miles), where double track commences, brakes were used for the first time in 122 miles; speed dropped below the 40 m.p.h. permitted through the junction and then, near milepost 64, to about 6 m.p.h. owing to culvert work in progress. Nine minutes are allowed for the 6¾ miles between Mangalore and Seymour, and the time lag passing the latter at the restricted 25 m.p.h. was no more than 2 min. 15 sec. A little over a mile past Seymour, the Goulburn River is crossed, and, after another level mile, the climb over the foothills commences. To the top of the Dividing Range at Heathcote Junction (33 miles) involves a rise of 681 feet in 28 miles. On this switchback section, with its thirteen downhill grades, the time of 35 min. 18 sec. was over two minutes less than the allowance. Booked time was bettered also for the downhill run to Broadmeadows (10½ miles) at the entrance to the electrified area. The 22½ miles were run in a shade over even time, instead of 25½ minutes. Even though a minute was lost on the run through the suburbs, the Spencer Street arrival at 50 seconds past noon represented a gain of 1 min. 25 sec., to which may be added three minutes for the per-way slack; this was made difficult by its location at the foot of a rising grade.

I left for home the same night on the 6.12 p.m. Leongatha-Wonthaggi train from Flinders Street, alighting at Koo-wee-rup, the nearest stopping station. This brought the trip mileage to 7,346.

Five minutes are allowed at Koo-wee-rup for engine requirements after the 41-mile run, but, owing to the poor quality coal used, the job usually takes twice as long. What impressed me most about the N.S.W.R. services was the freedom from such delays.

BOOK REVIEW

"THE EAST COAST ROUTE"

By George Dow, M.Inst.T., A.I.Loco.E.

(London, The Locomotive Publishing Co. Ltd.)

The rivalry between the two principal routes from London to Scotland, which existed, to some extent, right up to nationalization, has produced many famous trains and equally famous episodes. The East Coast

ABOUT ENGINES

NEW S.A.R. MIKADO

No. 740, first of ten 2-8-2's built by Clyde Engineering Co. Ltd., Sydney, for the South Australian Railways. Identical, except for the gauge (5 ft. 3 in. instead of 4 ft. 8½ in.), with the L class of the Commonwealth Railways, they were originally intended for service in China. Reader Wal Jack photographed No. 740 at Mile End, Adelaide, on 2nd March.

ute has always been slightly less orthodox, and therefore more interesting, than its competitors (few people do not know of the "Flying Scotsman"), and it is of this route that Mr. Dow writes, tracing its growth from a co-ordinated rail and stage coach service, in 1841, through the complete rail connection of 1848, to the establishment of the existing route in the eventies. The histories of the constituent companies e given, together with a complete account of the routes, operating practices, locomotives, and rolling k. Pictures, both present-day and historical, are cellent.

It is quite apparent that the "East Coast" has always been to the fore: no fewer than twenty-three "firsts" are listed—first dining car in Great Britain, etc.—many of them "world firsts".

(64 pages, stiff paper, card cover, 5½ in. x 8½ in. - - tainable from J. O. Smith, 9 Campbell Ave., Punchbowl, N.S.W.)

"MODEL STEAM LOCOMOTIVES"
By H. Greenly
(London, Cassell & Company)

The late Mr. Henry Greenly was known throughout the world of model steam locomotives, and his book, first published in 1922, was the standard work for amateurs throughout the English-speaking world. Mr. Greenly had planned to bring this work up to date in various ways, but war, and subsequent ill-health made it necessary for the task to be undertaken by his son-in-law, Mr. Earnest A. Steel; Mr. Steel had collaborated with Mr. Greenly in the preparatory stages of the revision. Little need be said about the book except that it covers every possible aspect of model steam locomotive construction, from 0 gauge to 15 in. gauge (Mr. Greenly, who was connected with locomotive engineering from 1899, designed the famous 1/3 scale locomotives of the Romney, Hythe & Dym-

N.S.W.R. BEYER-GARRATT ARRIVES

The first of the new 60 class 4-8-4 4-8-4 Bever-Garratts for the New South Wales Railways, No. 6001, arrived from the United Kingdom at the end of June, and is being assembled at Eveleigh Loco Workshops. Builder's number is 7473. No. 6002 is also believed to have arrived.

As indicated by a plate on the sub-frames (carrying the engine units), these castings were made by General Steel Castings Ltd., Eddystone, Pa., and Granite City, Ill., U.S.A.

The new loco has poling pockets on the buffer frames, as in 38 and 58 classes.

C.R. BUDD CARS EXTENDED

Commonwealth Railways Budd railcars now run to Tarcoola, S.A., on Wednesdays and Fridays, arriving there at 7.52 p.m., and returning the following day. CD2 of this class now has a steel pilot (cowcatcher).

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MELBOURNE HOBBY SHOW

An "All-Hobbies" exhibition will be held in Melbourne, commencing Saturday, 30th August. See next month's "Railways in Australia" for full details.

Don't miss this show — the model railway section alone will be worth a visit.

PUBLICATION DATE

Our regular publication date is the 15th of each month. At present, we are one month behind schedule, but news is brought up to date, as will be seen from references in this issue to events which took place in July.

church Railway, as well as several for the Ravenglass & Eskdale Railway). Mr. Greenly was equally at home in the smaller gauges, but it should be said that he regarded 2½ in. as the smallest suitable gauge for steam operation, and the book is written accordingly. Fourteen tables, and 370 diagrams and illustrations, make the book a veritable encyclopedia of the subject. (320 pp., 8 in. x 5½ in., hard cover — our copy, Meadmore's, 19/3.)

"MODEL RAILWAY POWER SIGNALLING"
By E. F. Carter
(London, Percival Marshall & Co. Ltd.)

Mr. Carter is already well known in the realm of model railway literature, and a new volume from his pen needs no recommendation from me. The price of this slim volume, however, may cause some to hesitate, but, if you want a really thorough book of information and guidance on power signalling and remote controlled points, this is it. Originally intended as a second part to "Electric Model Railways" by the same author, this new work was delayed by the war —a fortunate thing, as it happened, for Mr. Carter has been able to include recent developments in the use of electronic apparatus, particularly in the use of "light ray" control, and the making of valve amplifiers for model engine whistle sounds. The work is written and illustrated in such a way as to be understood by the most timid layman, but lacks nothing in authenticity as a result.

142 pp., 7½ in. x 5 in., hard cover — our copy, McGill's Agency, 16/-.)

"AUSTRALIAN LOCOMOTIVES"

Although it has not yet been possible to publish this promised book, moves are afoot, and it is hoped to make a definite announcement very shortly.

THINGS TO COME

Among articles lined up for publication are: A description of railmotors in Victoria; operation of 2 ft. gauge cane locomotives in Queensland; an article on Westinghouse brakes; another on track maintenance.

NEXT MONTH

Picture and full description of N.S.W.R. Beyer-Garratt.

ARTICLES WANTED

If you would like to write on any aspect of railway operation in Australia, we shall be glad to have your manuscript for publication. Articles of any length can be accepted if they are otherwise suitable. Illustrations are welcomed, but bear in mind that one or two first-class pictures are better than three or four second-rate prints. We do not pay for contributions at present; your reward must be the same as ours — the interest and gratitude of readers!

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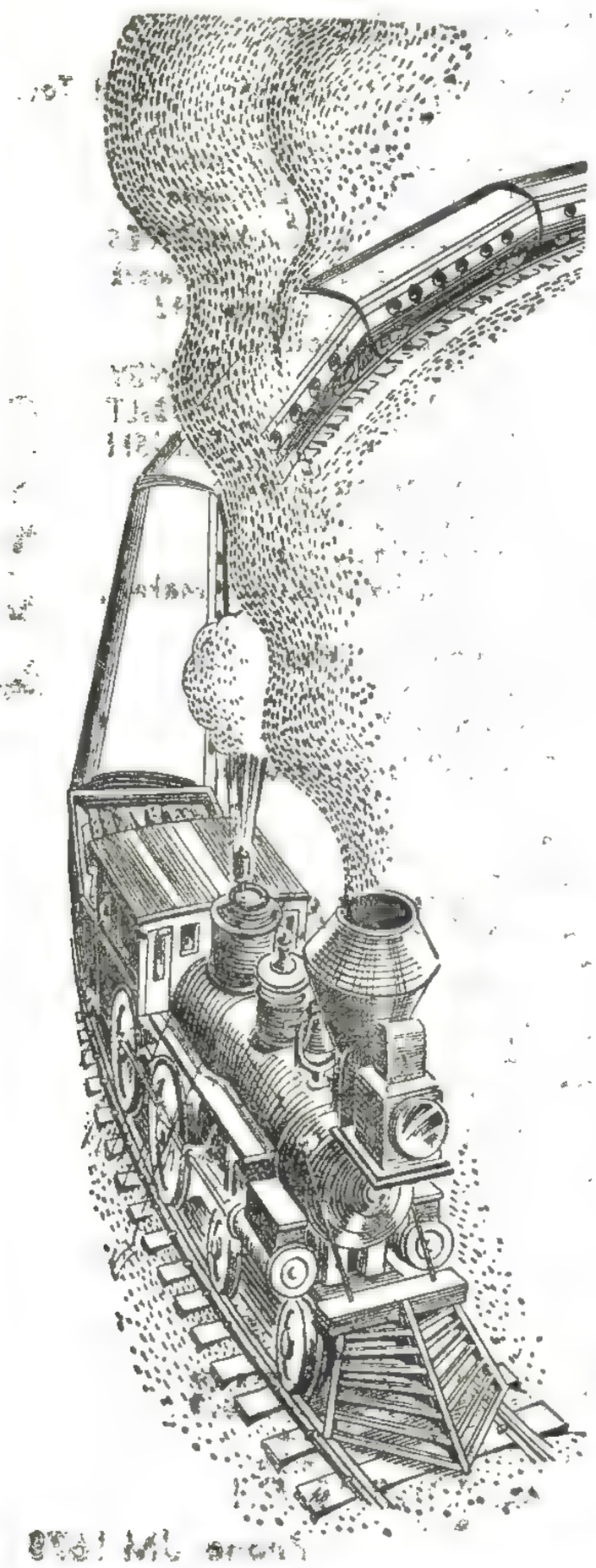

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NEW V.R. DIESEL **(from page 3)**

siderations, or the expense involved, have prevented their adoption. Approval in principal has been given for altering V.R. lines to standard gauge, but economic conditions have been unfavourable for some time. It is possible, however, that the North-East line and branches may be converted, even though other lines have to await a more suitable time. This would enable through running from Brisbane, Q., to Melbourne.

The standard gauge diesels for the Commonwealth Railways, also Clyde-built, proceeded to Albury under their own power, but were fitted at Bandiana with broad gauge transporter trucks (unpowered) and hauled in ordinary freight trains to Melbourne, and thence to Port Pirie, S.A., there being no 5 ft. 3 in. powered trucks available at the time.

N.S.W.R. BRISBANE TEST **(from page 4)**

No beauty, the new loco is, however, a powerful machine, with six 450 h.p. traction motors, totalling 2700 h.p. Other details may be ascertained from the diagram reproduced on this page. Power supply is at 1500 volts D.C., standard on the N.S.W.R.

The 40 additional locomotives, on order from the United Kingdom, will be even more powerful, having six 630 h.p. motors, with a total of 3780 h.p. Two units, in multiple, will be used on each train, loads of 2000 tons being hauled across the mountains to Sydney. These locos will weigh 108 tons, as against 112 tons in the case of No. 4501. Other dimensions will be substantially the same.

DIESEL OUT — STEAM IN!

S.A.R. Mishap

Following a derailment which held up traffic for nearly a day, and was responsible for the "Overland" arriving in Melbourne 14 hours late, multiple working of diesel-electric locomotives over the Hills section of the South Australian Railways has been banned. Single unit diesels work freight trains, and the "Overland" is once again hauled by the faithful 500 class 4-8-4's.

S.A.R. LOCO NOTES

No. 743 of the 740 class 2-8-2 ex-U.N.R.R.A. locomotives has been delivered.

Another 300 class ASG, No. 302, was placed in service at the end of June. It is fitted with mechanical lubricators. These engines are permitted to run only on the Pirie-Cockburn and Peterborough-Terowie lines.

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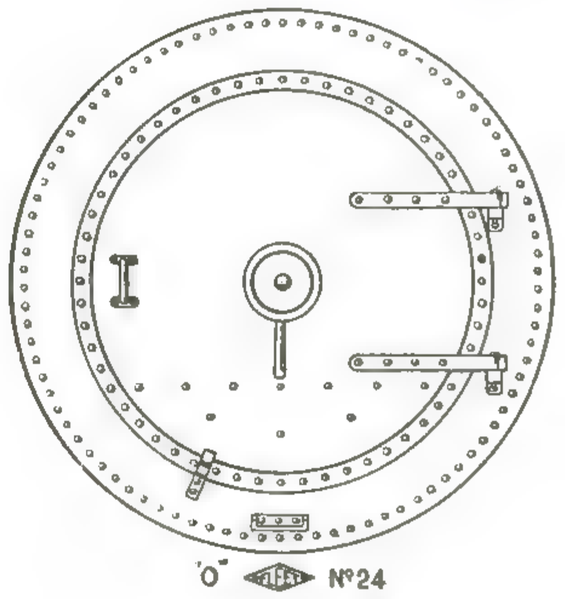

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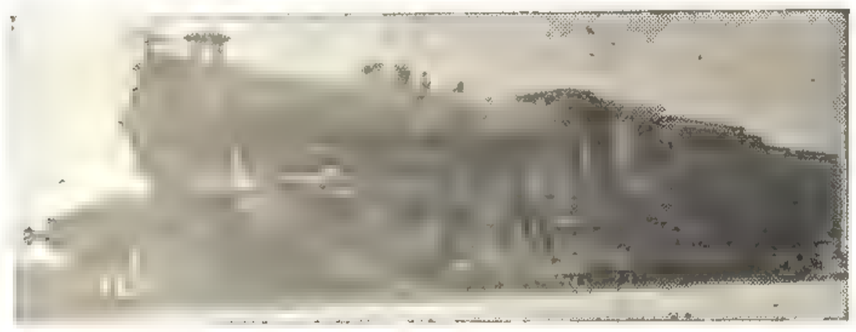

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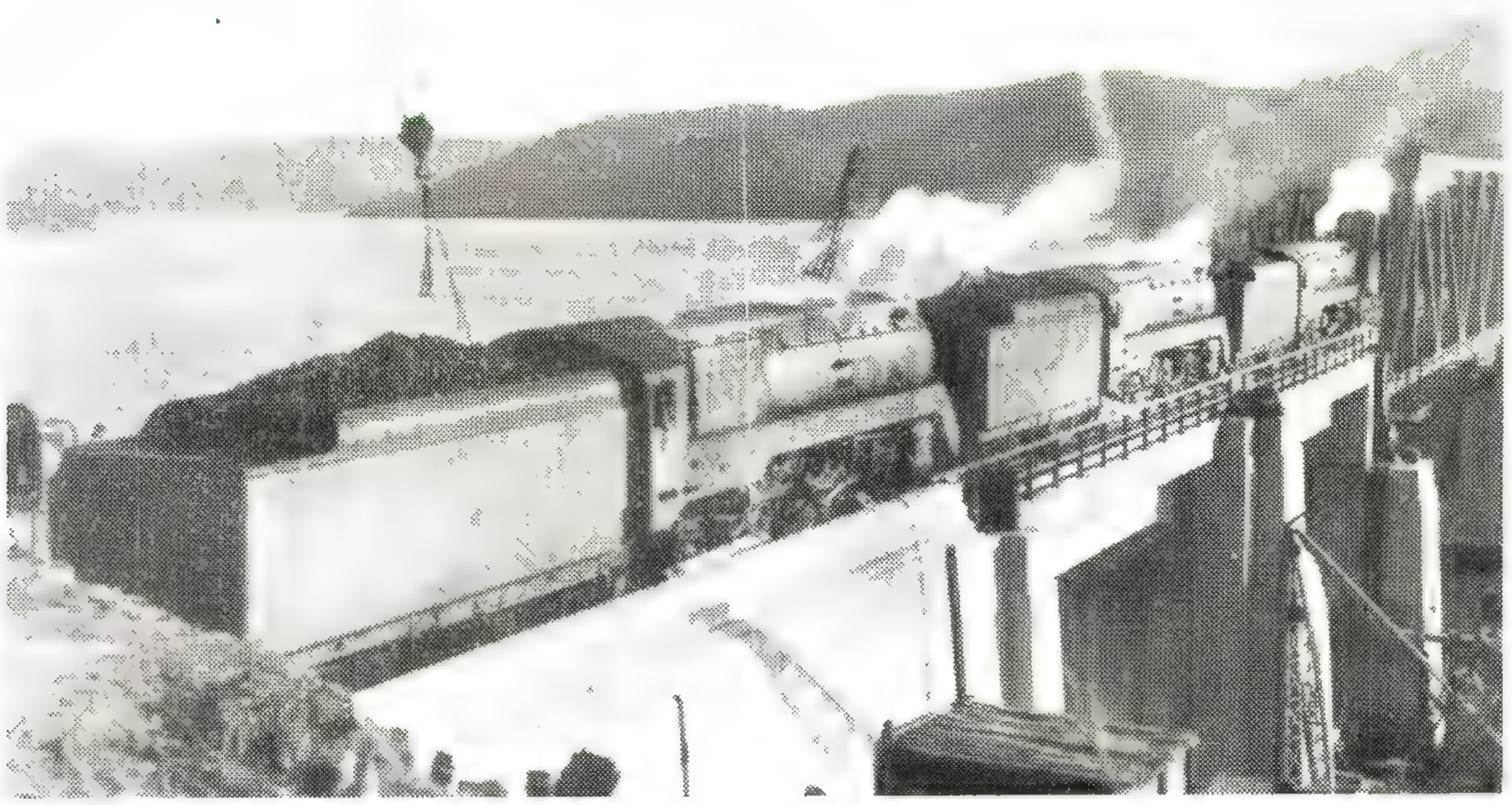
The Magazine About Australian Trains



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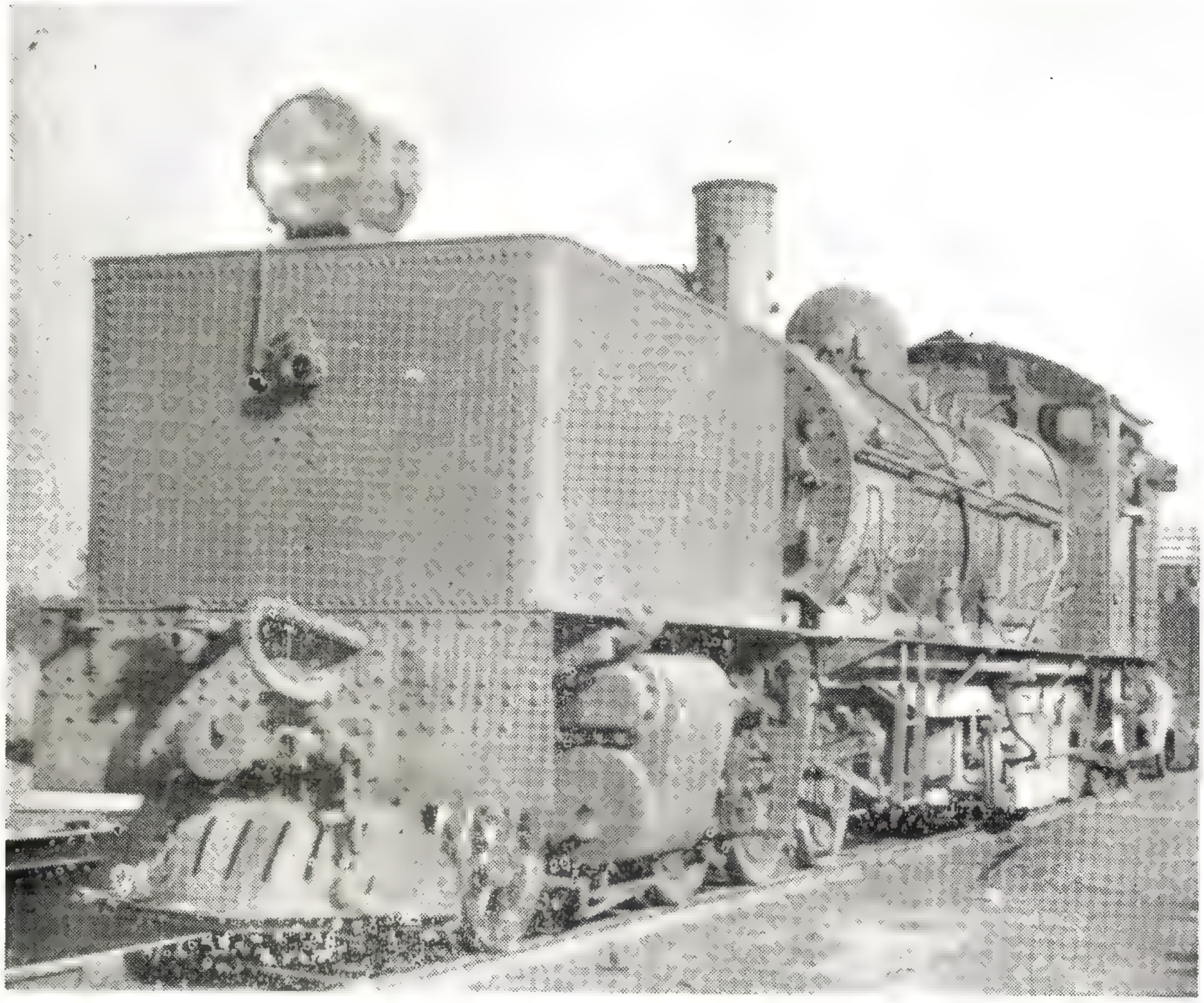

No. 499, MSA class 2-6-0 + 0-6-2
Garratt on the W.A.G.R.
(Photo by Bruce Marshall.)

BEYER GARRATTS IN AUSTRALIA

by H. J. Wright

As the first units of an order for fifty Beyer-Garratt type locomotives are now coming into service on the New South Wales Railways, it is an appropriate time to review the history of this type of locomotive in Australia.

There are some who are under the impression that the Beyer-Garratt design is comparatively new to this country, yet the world's first Garratt locomotive was built for and worked in Tasmania over forty years ago.

It was in the year 1907 that a Mr. Garratt, then the Inspecting Engineer for the N.S.W. Government Railways, first discussed his ideas with the firm of Beyer, Peacock Ltd. Mr. Garratt was visiting their foundry at Gorton, England, where he was supervising the construction of conventional type locomotives on order for the N.S.W.G.R.

The plan originally outlined by Mr. Garratt was for a new method of mounting artillery on railway bogies, and from this scheme was born the basic idea for an articulated steam locomotive of the type which now bears his name.

The firm of Beyer-Peacock, who, at that time, had 53 years of experience in locomotive construction, worked out the design for the patent which Mr. Garratt made during the latter portion of the year 1907. The essential feature of this design was a boiler and cab unit slung on a cradle between, and pivot-mounted on two engine units.

So sound was this basic idea, as laid down in the original patent of 1907, that to-day, 45 years later, it is still the main feature in the design of any Garratt type locomotive.

The Beyer-Garratt Design

Looking at a modern Garratt type locomotive, one notices that the boiler, smokebox, firebox, and cab are nearly identical with the conventional steam locomotive. They are mounted on a frame which is supported by being pivot-mounted to two engine units which comprise leading and trailing bogies, driving wheels, steam chests and cylinders, connecting and coupling rods and valve gears. A water storage tank is mounted above the leading engine unit, whilst fuel container and second water tank are mounted on the rear engine unit.

The advantages of this design are greater flexibility on curves, elimination of the restrictions placed on firebox width and depth, distribution of weight over more axles, and that the unit may be operated in either direction, thus eliminating some undesirable features of the conventional steam locomotive.

First To Tasmania

The first order for this new type of articulated locomotive came from the Government of Tasmania in 1908, the first two engines of this patent being delivered by Beyer-Peacock two years later. These were for use on the Government's 2-feet gauge line between Zeehan and Williamsford, on the West Coast. They were of the 0-4-0 plus 0-4-0 wheel arrangement, having a grate area of 14.8 sq. feet, 628 sq. feet of heating surface, two low pressure cylinders 17 in. diameter, with 16 in. stroke at the front of the locomotive and two high pressure cylinders 11 in. diameter with 16 in. stroke. They carried 840 gallons of water and 1 ton of coal, and had a total weight of 33½ tons. They were withdrawn from service in 1929, when the line was closed. Boiler pressure was 195 lbs. per sq. inch. Overall length was 31 ft. 9 in. Wheels were 31½ in. diameter.

Some years ago, one of these units, K1, was rejuvenated and returned to Beyer-Peacock and Coy. Ltd., Manchester, where it is being preserved as a historical museum piece.

A further four Garratt type locomotives were received from Beyer-Peacock during 1912, for use on the T.G.R.'s main lines of 3 ft. 6 in. gauge. Two of these units, designated the "L" class, were of the

2-6-2 plus 2-6-2 wheel arrangement. They had 2,019 sq. feet of heating surface, including 333 sq. feet of superheater, a grate area of 33.9 sq. feet, with a boiler pressure of 160 lbs. per sq. inch. Length over the buffers was 63 ft. 1 in., for a total weight of 90 tons, of which 56 tons 19 cwt. rested on the driving wheels. Tractive effort at 85% boiler pressure was 32,057 lbs. The piston valves were actuated by Walchaert valve gear. Water capacity was 3,000 gallons, and there was space for 4 tons of coal. They were scrapped several years ago.

The two other units, designated the M class, had an identical boiler with the "L" class on a wheel arrangement of 4-4-2 plus 2-4-4. Tractive effort at 85% boiler pressure was 26,112 lbs. Walchaert valve gear actuated piston valves delivering steam to four cylinders 12 in. in diameter by 20 in. stroke. Driving wheels were 60 in. in diameter, and supported a weight of 48 tons. Water capacity was 3,000 gallons of water, and the bunker carried 4 tons of coal. The overall length (over cow catchers) was 72 ft. 3 in., and had a total weight of 94 tons 11 cwt. These engines were scrapped in 1945.

V.R. Narrow-gauge Garratts

In 1926, the Victorian Railways received two Garratt type locomotives from Beyer-Peacock, one unit being used on the Colac-Crowes section, and the other for the Moe-Walhalla run, both 2 ft. 6 in. gauge lines. These units are of the 2-6-0 plus 0-6-2 wheel arrangement, weigh 69 tons, and develop a tractive effort of 26,850 lbs. These units carried 3½ tons of coal and 1,680 gallons of water. Grate area is 22.6 sq. feet, heating surface 1,227 sq. feet, including 173 sq. feet of superheating surface; boiler pressure is 180 lbs. per sq. inch. Overall length is 49 ft. 10 in. These units are fitted with four 13¼ in. diameter cylinders, with 18 in. stroke, with 36 in. diameter driving wheels. Adhesive weight is 55 tons 1 cwt., with a total weight of 69 tons 1 cwt. Their use on these lightly railed sections enabled loads of 68 and 255 tons as against 55 and 180 tons respectively for conventional steam locos.

Private Line Places Order

During 1930, the Emu Bay Railway Coy. took delivery of three Beyer-Garratt locomotives for hauling concentrates from their Rosebury mines to their smelting works at Burnie, on the island of Tasmania. This is by far the heaviest portion of their 88 miles 3 ft. 6 in. gauge line, and abounds in grades of 1 in 40 and 5 chain curves. These locomotives, weighing 132 tons, carry 6 tons of coal and 5,250 gallons of water, and, with a boiler pressure of 180 lbs. per sq. inch, develop a tractive effort of 42,630 lbs. They have 2,417 sq. feet, of which 380 sq. feet forms the superheater. Grate area is 43.6 sq. feet. Total length of these 4-8-2 plus 2-8-4 units is approximately 80 ft. Adhesive weight is 84 tons. The four 16½ in. diameter cylinders, with a stroke of 22 inches, are actuated by Walchaert valve gear. The driving wheels are 43 in. in diameter. These units at the time of their delivery were amongst the most powerful locomotives in Australia (the N.S.W.R.'s modern 200-tons C-38 class Pacifics develop a tractive effort of 36,200 lbs.). The through load of these units is 400 tons, and, during World War 2, the line handled approximately 100,000 tons of zinc, lead and copper each year, in addition to other traffic.

W.A.G.R., Too

The 3 ft. 6 in. gauge Western Australian Government Railways imported 6 saturated 2-6-0 plus 0-6-2 locomotives from Beyer-Peacock in 1911, and 7 superheated units during 1913, each weighing 69.8 tons, of which 55.45 tons was available for adhesion. The boiler had a pressure of 160 lbs. per sq. inch, and contained 1,066½ sq. feet of evaporating heating surface, and had a superheater containing 245 sq. feet. Driving wheels were 39 in. in diameter, being turned by 4 cylinders, 13¼ in. by 20 in. Tractive effort at 85% boiler pressure was rated at 24,480 lbs. They carried 3 tons of coal and 3,000 gallons of water.

To cope with an increase of train loading, the W.A.G.R. constructed in their Midland shops 10 Garratt type locomotives to their own design, classed "M.S.A." These units, built during 1930, were of the same wheel arrangement as the earlier Garratts, and also had the same size cylinders. Driving wheels are also 39 in. in diameter. Grate area was 27 sq. feet, and heating surface is 1,086 sq. feet evaporative. Total weight is 74 tons 2 cwt., with an overall length of 55 ft. 5¾ in. They carry 4 tons of coal and 2,000 gallons of water. These units were 10% more powerful than their then existing strongest steam power, and were able to haul 558 tons (tractive effort 26,784 lbs.), over grades of 1 in 80, with sharp radius curves that restricted the use of larger locomotives having a long rigid wheelbase. These units were used on the working of freight and mixed traffic (see illustration).

Australian Standard Garratt

With the advent of World War 2 in 1939, traffic on all railway systems throughout the Commonwealth of Australia increased to a phenomenal extent, due to the movement of men and materials which taxed the locomotives and rolling stock to their utmost, this being noticeable more so on the 3 ft. 6 in. gauge systems.

In an effort to relieve this sudden strain on motive power, the Commonwealth Land Transport Board loaned a staff of skilled draughtsmen recruited from the various Commonwealth systems to the W.A.G.R. Chief Mechanical Engineer, with the object of designing an articulated locomotive suitable for Australian conditions, to be used in the narrow gauge States.

The result was a locomotive which was constructed at various Railway workshops throughout Australia, and in some cases the component parts were sent interstate to be assembled. This locomotive received the name "Australian Standard Garratt" (A.S.G.). They are of the 4-8-2 plus 2-8-4 wheel arrangement, with four 14½ by 24 inch cylinders and 48 in. driving wheels. The boiler pressure is 200 lbs. per sq. inch, grate area 35 sq. feet, and a total evaporative heating surface of 1,698 sq. feet, developing a tractive effort of 34,520 lbs. Total weight is 115 tons 18 cwt., overall length 85 ft. 10 in. The valves are actuated by Walschaert valve gear. They carry 6 tons of coal and 4,200 gallons of water.

There has been considerable argument for and against this type of locomotive, but nothing has been said against the basic design, but mainly features of the Australian design. Locomotive enginemen, through their union, have, in several States, completely

(Continued on page 14)

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DON'T SQUABBLE —

Standardize Those Gauges !

Representatives of interstate road transport concerns recently added to the spice of life by pushing a load in a wheelbarrow from Sydney to Melbourne. This rather vaudevillian stunt was intended to prove that this form of transport is faster than the rail service. Whether this was so or not (and there seems to have been some confusion over the point), any demonstration of the slowness of rail freights serves not to show that railways are outmoded, but that it is vitally necessary that the planned standardisation of gauges be commenced at once. The delay lies not in the transport by rail, but in the transhipment at border stations from the standard gauge lines of the N.S.W.R. to the broad gauge V.R. Suggestions were made recently that, if the full scheme cannot be carried out in Victoria, the North-East line (the main line to the N.S.W. border) and branches should be tackled without delay as a separate undertaking. Such a scheme would effect amazing reductions in expense, delay, and damage, repaying the heavy outlay in short order.

The world's railways have played a major part in our political and economic history for more than a century, and continue to do so at the present day. There is a growing tendency in some quarters, fostered perhaps by ignorance or by special interests, to regard them as obsolete. In point of fact, despite the rapid growth of other forms of transport, railways have a large and, in many countries, a growing part to play. Much misunderstanding arises from the failure to realize that rail, road, air, and sea transport are not in themselves competitive, but complementary, and that each should be used to perform those functions for which it is best fitted.

The outstanding feature of rail transport is its carrying capacity. In respect of passengers, this is best realized in carrying large numbers between major centres of population and business, especially where long distances are involved, and in the daily "commutation" of urban workers. In addition, where railways are provided primarily for freight carrying, it is often an economic proposition to provide passenger facilities even for comparatively light traffic. As regards freight, railways excel in the bulk haulage of coal and other fuels, ores, grain, livestock, and similar commodities — in fact, any loading which requires at least one freight car. There is a tendency to think of less-than-carload freight as the peculiar province of road transport, owing to the better possibility for door-to-door delivery without intermediate handling. However, with increasing urban congestion, it is becoming more difficult to operate big, long-distance trucks through city streets, resulting in the establishment of road transport terminals for transhipment of freight to smaller vehicles for ultimate delivery. This effectively destroys the potential advantage of road transport for this class of traffic.

The principal drawback of railways is their high initial cost. However, with the introduction of very large vehicles running at high speeds, modern road construction and maintenance costs are also heavy. Where road-making materials are not readily available, these costs often approach that of a railway. Even with higher capital costs, the low manpower requirements of a railway tell in its favour. Australian railways now run trains of 1,200 tons nett load; in the U.S.A., coal and ore trains of up to 8,000 tons nett are operated. Such trains require crews of three and five men, respectively, whereas 80 15-ton trucks (the largest which can run with safety on Australian country roads), or, in the U.S.A., 320 25-ton trucks, each with its own driver, would be required. Road vehicles also require more frequent and more intricate servicing. Signalling, etc., staff on railways amount to only a fraction of a man per train on a railway equipped with automatic signalling or centralized train control.

Fuel supplies, too, weigh heavily in favour of railways. Coal is found in most countries, wood in almost all, oil in only comparatively few. Steam locomotives use whichever fuel is readily available and, in an emergency, can be altered readily to use another. Even where diesel locomotives are favoured, they haul a given load twelve times as far on a gallon of oil as do diesel road trucks.

With the foregoing in mind, it is not surprising that the U.S.A., home of the automotive industry, provided with large deposits of oil, and with the world's most highly motorized population, has also the world's greatest railway network. Despite some pruning of redundant facilities — usually in worked-out mining areas, or where there had been excessive duplication by competing lines — new railways are still being built, and billions of dollars spent on improvements.

Russia, second greatest industrial power in the world, already has an enormous railway system, and new lines are being built on a scale unequalled anywhere since the great American expansion of the last century.

China, which, because of unsettled conditions, had lagged behind other great countries, is building new railways at a remarkably rapid rate for a country so deficient in heavy industry, having already caught up with very great arrears of maintenance. Railways form the principal means of long-distance transport (apart from the great waterways), with roads as feeders, or as expedients where railways have not yet been constructed. The ready availability of steaming coal in most parts of China, compared with the need to import most of the oil used, is another factor in the preference for railways.

In under-developed countries and in several remote areas, railways of considerable extent have been or are being constructed, notably in Saudi Arabia, Israel, Liberia, Labrador, and N.W. Canada, with considerable extensions to existing systems planned in East and West Africa.

In more settled countries, such construction is rarely possible or necessary, although, even in Britain, new lines are still being built where required.

Of all countries, Australia is probably the least active in proportion to her requirements, the notorious break-of-gauge, with its attendant delays and damage at transhipment points having a stifling effect. In such artificial conditions, road transport can often provide superior service where it would not normally be possible. The first major gauge standardisation

(Continued on page 13)

First Beyer-Garratt locomotive in service on the New South Wales Railways — No. 6002 — at North Junction, Meek's Road Junctions, on her first trial trip from Eveleigh Workshops to Penrith and return, on 30/7/52. (Photo. by Noel F. Reed.)

BEYER-GARRATT LOCOMOTIVES FOR N.S.W.R.

AD-60 Class 4-8-4 + 4-8-4 Type

The first two of fifty Beyer-Garratt locomotives being built in England for the New South Wales Railways were landed at Sydney on June 13. The locomotives were shipped in a dismantled state by the builders, Beyer, Peacock & Co., and are being assembled at Eveleigh Shops, N.S.W.R. Originally twenty-five locomotives were ordered in June, 1949, and subsequently an additional twenty-five were ordered.

The Beyer-Garratt is a new type of locomotive to the New South Wales Railways, and their first articulated steam power, although several other Australian railways (all narrow gauge) have operated them for many years. It is interesting to note that the very first Beyer-Garratts ever built went into service on the 2-feet gauge Zeehan-Williamsford section of the Tasmanian Government Railways in 1910. One of these original machines was recently purchased back by Beyer, Peacock & Co., and shipped back to England for preservation at their Gorton Works, Manchester.

The New South Wales series, designated as AD-60 class (Articulated eight-coupled) will bear the numbers 6001-6050. They are the largest, heaviest and most powerful locomotives yet on the N.S.W.R., although with an axle loading of no more than 16 tons, they will be capable of operation over secondary tracks as well as the heaviest main lines. Features of the design were worked out by the makers to the requirements of the Chief Mechanical Engineer, N.S.W.R., and include a number of innovations, such as unit cast steel engine frames with cylinders cast integral. Cylinders and steam chests are fitted with renewable cast iron liners, air-operated drain cocks, and the N.S.W.R. standard "Cardew" automatic pressure relief valves.

The boiler cradle frame is of rolled steel plate, transversely stayed, and the cast steel pivot centres have automatic adjustment to compensate for wear. Although designed primarily for freight service, transition screw couplers and side buffers are fitted as well as "Alliance" type bottom-operated automatic couplers. A self-cleaning type of smokebox, incorporating standard N.S.W.R. spark arrestor and a large diameter stack, are fitted. The hopper type ashpan is self-emptying through side discharge doors.

The springs are of the laminated type, compensated on each side, independent of the bogies. All axle boxes and main crank pins are fitted with S.K.F. self-aligning roller bearings. The cab is roomy and equipped with upholstered back-rests, and has large side windows and entrance doors. Boiler mountings, etc., follow N.S.W.R. standard practice, and a Melesco multiple-valve front end throttle is provided. Boiler feed is by two Nathan non-lifting live steam injectors, each capable of delivering 4,800 gallons per hour through top feed clack valves.

Standard A-6ET Westinghouse air brake equipment is fitted, with a 7 in. 80 cu. ft. per min. cross-compound compressor, which is mounted on a bracket on the right hand side of the smokebox. A standard HT type mechanical stoker is fitted, as the grate area is 63.5 sq. ft. The four cylinders (two per unit) are 19¼ in. dia. x 26 in. stroke, and at 200 lb. per sq. in. boiler pressure, the tractive effort at 85% is rated at 59,560 lb. and the factor of adhesion 4.8. The long-travel piston valves are 10 in. dia and actuated by Walschaerts gear, controlled from a Hadfield power reverse unit.

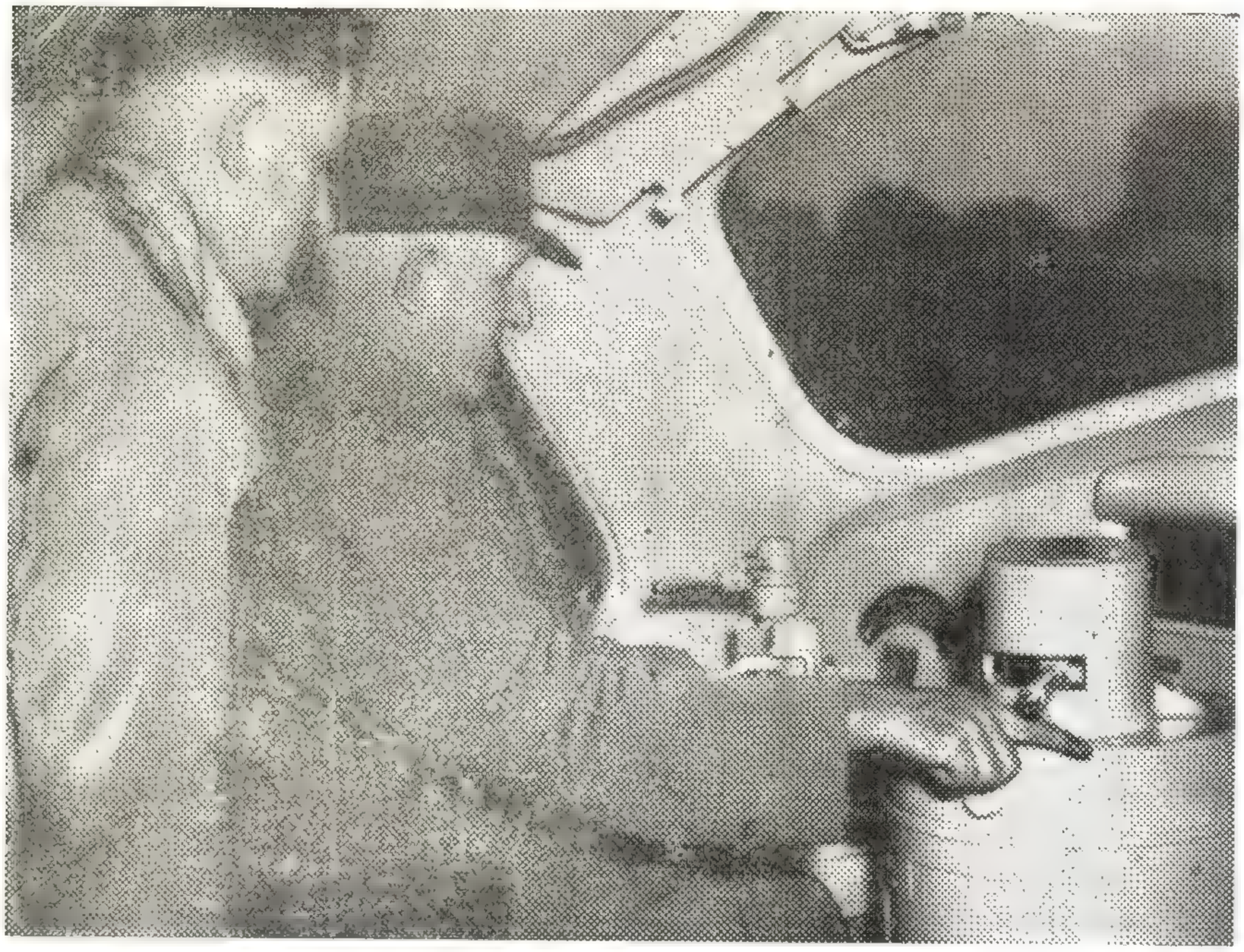
The combined total heating surface is made up of firebox, 238 sq. ft. (including arch tubes); flues and tubes, 2,792 sq. ft.; and superheater elements (50), totalling 750 sq. ft. The driving wheels are of the conventional spoked type, 55 in. dia., with 36 in. dia. bogie wheels; the latter being N.S.W.R. standard rolled steel type. The outside diameter of the boiler is 87 in., and the round top firebox has radial stays. Distance between tube plates is 13 ft. 6½ in. Three Ross "Pop" type safety valves are located over the firebox crown sheet.

Estimated weights in working order are: Coupled wheels 128 tons, carrying wheels 132 tons, total 260 tons. Coupled wheelbase (rigid) of each unit is 14 ft. 9 in. Each unit totals 37 ft. 6 in., and the total wheelbase is 97 ft. 8 in., requiring 100-feet turntables for roundhouse stabling. Length over coupler pull lines is 108 ft. 8 in.

Maximum width is 9 ft. 8 in. and height to top of stack is 14 ft. Combined water capacity of front and rear tanks is 9,000 gals., and the coal capacity of the bunker is 14 tons. The second batch of twenty-five locomotives will have thermic syphons in place of arch tubes in the firebox, with a slightly greater direct heating surface.

It is proposed to locate the first 25 Garratts at Enfield Depot (Sydney, and concentrate them in coal and freight service between Enfield Yard and Broadmeadow Yard (Newcastle). The remaining 25 will be allocated at Broadmeadow, and possibly other Northern Division depots, such as Werris Creek. Roundhouse turntables at Broadmeadow and Enfield

(Continued on page 13)



IN THE CAB — NEW STYLE

A Melbourne "Age" photographer took this shot of the cab interior of "Harold W. Clapp," the Victorian Railways' new diesel-electric locomotive (see pictures and description, last issue).

We have been advised that the new locomotive reached a maximum speed of just over 81 m.p.h. near Donnybrook when returning from Seymour with the official train. The normal maximum speed of 70 m.p.h. was lifted over several sections of the track for this journey.

No. 61, the second of the 26 B class diesel-electric locomotives on order, is due some time in August, when tests will be run with the two locomotives coupled.

Railway Round-up

News from Australian Railways

CLYDE TO EXPORT DIESELS

Order from Pakistan

Probably for the first time in the history of Australian railways, Australian-built locomotives are to be exported. The Government of Pakistan has ordered nine diesel-electrics from the Clyde Engineering Co., Sydney, N.S.W., builders of the Commonwealth Railways GM class and the Victorian Railways B class locomotives. The current order is worth approximately £1 million, and it is likely that further orders will follow.

This move will be of great assistance to Australian railways, as one of the essentials of efficient manufacture of diesel-electric locomotives is the use of mass production methods which, in turn, require a steady flow of orders.

Clyde almost became exporters of steam locomotives. The Commonwealth Railways L class, and the South Australian Railways 740 class were originally ordered by U.N.R.R.A. for delivery to China.

OUR COVER PICTURE

Hawkesbury Bridge Under Test

This unusual view, by a reader, shows 38 class Pacifics Nos. 3801, 3804, and another, of the New South Wales Railways, waiting to take part in the moving load test on the new Hawkesbury River Bridge. Three other 38's (not shown) were on the adjacent track.

QUEENSLAND RAILWAYS

Minister Announces Improvements

Among works mentioned by the Queensland Minister for Transport (Mr. Duggan) in a recent address to the Brisbane Chamber of Commerce was the strengthening of all bridges on the main Coast line as far north as Rockhampton and, in the suburban area, between Brisbane and Ipswich. When this work is finished, locomotive axle loads of 15 tons will be permitted in place of the existing 12 tons limit, which has hampered motive power development.

New Brisbane Freight Terminal

Because of congestion at the existing Roma Street Goods Depot, a new freight terminal is to be built at Normanby, at a cost of £150,000. The Wagon Repair Shops at present occupying this site are being removed to Wacol, the cost being £86,000.

New 4-Car Diesel Trains

The first of six 4-car diesel trains on order from the Commonwealth Engineering Co. Ltd., of Sydney, N.S.W., will go into service during August, on the Southport line, serving a tourist and residential area to the east of Brisbane. Others will be used on various country routes.

These trains, which can be operated as 2-car or 4-car sets, are powered by two 153 h.p. Gardner diesels, and have a maximum speed of 45 m.p.h. Seating is provided for 188 passengers.

Suburban Developments

Duplication of the Enoggera and Kuraby lines continues to make progress, as does intensive planning and preliminary work on the electrification scheme. The latter work includes heavier rail (94 lb. in place of 60 lb.), and longer platforms.

MT. MORGAN DEVIATION

Abt System Rack Line Replaced

The 6½-mile deviation between Moonmera and Moongan on the Mt. Morgan line in Central Queensland was

Why Some A2's Have Walschaert Valve Gear

By "BANJO"

Victorian readers will be familiar with the ubiquitous A2 — a ponderous 4-6-0 used on almost every type of train on the Victorian Railways, from mainline expresses to a Port Melbourne Transfer Goods.

The older members of the class originally appeared with saturated steam, and Stephenson link motion. All, except some which have been scrapped. have now been superheated. Later engines were superheated when built, and fitted with Walschaert valve gear — the first V.R. locos. to have this type of motion. At that time, the saturated steam A2's were re-classed A1, being again classed A2 when later superheated.

Reasons which influenced the introduction of the new form of the A2 class are outlined hereunder.

Firstly, the Walschaert-fitted locomotive was 1,745 lbs. lighter, each set of valve gear having only one eccentric rod instead of two.

Secondly, the gear is designed with the forces on nearly straight lines, giving better moving force to valve.

Further, the absence of internal valve gear permits better frame bracing, everything being keyed and bolted.

Again, a constant lead is obtained from the straight line of motion, with the combined movement of the combination lever, combination link, and radius rod instead of being advanced with the aid of an eccentric as with Stephenson link gear.

It was also thought, at the time, that there could be a reduction, with a corresponding prolongation of boiler life, by the use of superheating. The idea was that the steam would be increased in volume by 12% from leaving the dome until reaching the cylinder; in the case of saturated steam locomotives, the pressure decreases during this stage. In practice, this theory proved false.

In addition to superheating and Walschaert valve gear, the newer A2's were fitted with Pennsylvania piston valves, then the most economical on the V.R. They could be used for either inside or outside steam admission, and had less friction than earlier types.

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opened by the Minister for Transport (Mr. Duggan) on 19th April. Fliminating a difficult section on which the use of Abt rack locomotives was necessary over grades of 1 in 16½ and 1 in 22, the new line has maximum adverse grades of 1 in 50, compensated. Permissable loads are now 275 tons uphill, and 650 tons on the downgrade, the loading being mainly in the latter direction. Previously, the maximum loads, with the assistance of an Abt locomotive, were 125 tons and 100 tons, respectively.

Heavy coal traffic from the new branch to the Callide coalfield, and increased production of pyrites, wheat, and cotton, made the deviation a necessity. In addition, the Abt locomotives were approaching the end of their economic life.

The work cost £360,000, and involved particularly difficult excavations through hard quartzite rock. Cuts and fills are plentiful, the deepest and highest being 76 feet and 92 feet, respectively. Total distance is increased by 1 mile 71 chains over the old mileage.

NEW BUFFET CARS FOR N.S.W.R.

For Brisbane Express Service

Three new buffet cars, 75 feet in length, air-conditioned, and seating 30 passengers each, are to be built for the Brisbane run.

Old Sleeping Cars Converted

Four sleeping cars of the AM class, with open end platforms and 4-wheel trucks, are being converted into day cars of the BJ (1st class) and FJ (2nd class) types. Other cars of this class were converted similarly before the war.

Another pre-war practice, the conversion of MCX cars to MCE by substituting enclosed compartments for the open centre section, is being continued.

Suburban Cars for Work Trains

Eighteen wooden trailer cars, originally built for steam suburban service and later widened and altered for electric operation, are being rebuilt by Ritchie Bros., Auburn for use in overhead wiring trains. These trains will be used during the electrification of the Western and Northern lines.

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A steam-hauled suburban car, No. 1269, class FA, has been rebuilt as an instruction car for training drivers for the Alco-G.E. diesel locomotives.

N.S.W.R. NORTH COAST DAYLIGHT EXPRESS
Still Steam-hauled

Following difficulties experienced with the 4-car diesel set, the "North Coast Daylight" express between Sydney and Grafton (see cover illustrations, "R. in A.," April, 1952) has been steam-hauled since mid-May. Usually SAB set No. 105 (FR, BR, BR, RFR, FR) with an EHO van is provided, approximate loaded weight being 170 tons. A 36 class 4-6-0 provides motive power.

COMRAILS STANDARD GAUGE LINES
Last Diesel Delivered

GM11, the last of the diesel-electric locomotives ordered by the Commonwealth Railways from Clyde Engineering Co. Ltd., was delivered at Port Pirie, S.A., early in July. This loco, together with a dismantled 740 class 2-8-2 for the S.A.R. from the same builders, arrived at North Melbourne on 1/7/52. The diesel engines of GM11 were run (the loco being on unpowered carrying trucks for delivery over the broad gauge V.R. and S.A.R. lines, it could not be taken out on the road) for the benefit of V.R. loco men, who will soon be driving similar locomotives.

C.R. NORTH-SOUTH STANDARDIZATION
Commission Recommends Western Route

The Royal Commission which sat to consider the alternatives of standardizing the existing 3 ft. 6 in. line from Quorn via Hawker, or of constructing a new standard gauge line via Stirling and the western side of the Flinders Range, have advised in favour of the latter. It was considered that the interests of the national economy outweighed any possible loss to the districts of Quorn and Hawker. In addition, the new route would provide easier gradients. The existing narrow gauge line between Stirling and Hawker will be retained.

Principal opposition to the new line came from the towns affected. The South Australian Railways representative, whilst agreeing with the findings, felt that insufficient weight had been given to the effect on the 3 ft. 6 in. gauge Northern Division of the S.A.R. and the district it served.

Coal and Cattle

The new line, which will run initially as far as Leigh Creek, will speed up deliveries of coal from the extensive field there, as well as improving the transport of cattle. Annual saving over the existing costs is expected to be £80,000.

TASMANIAN RAIL WORKS SLOWED
Loan Cut Affects Programme

The Tasmanian Commissioner for Transport (Mr. Baird) announced recently that many railway rehabilitation works would have to be slowed down or abandoned because of the cut in loan funds this year. The necessity to undertake certain works would require inroads into the railway depreciation fund. In particular, track relaying, yard extensions, and car reconditioning would be affected, and delivery of the 400 car underframes on order from Britain would have to be slowed down. The Commission is reviewing the programme of works.

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V.R. News

MORE AIR-CONDITIONING

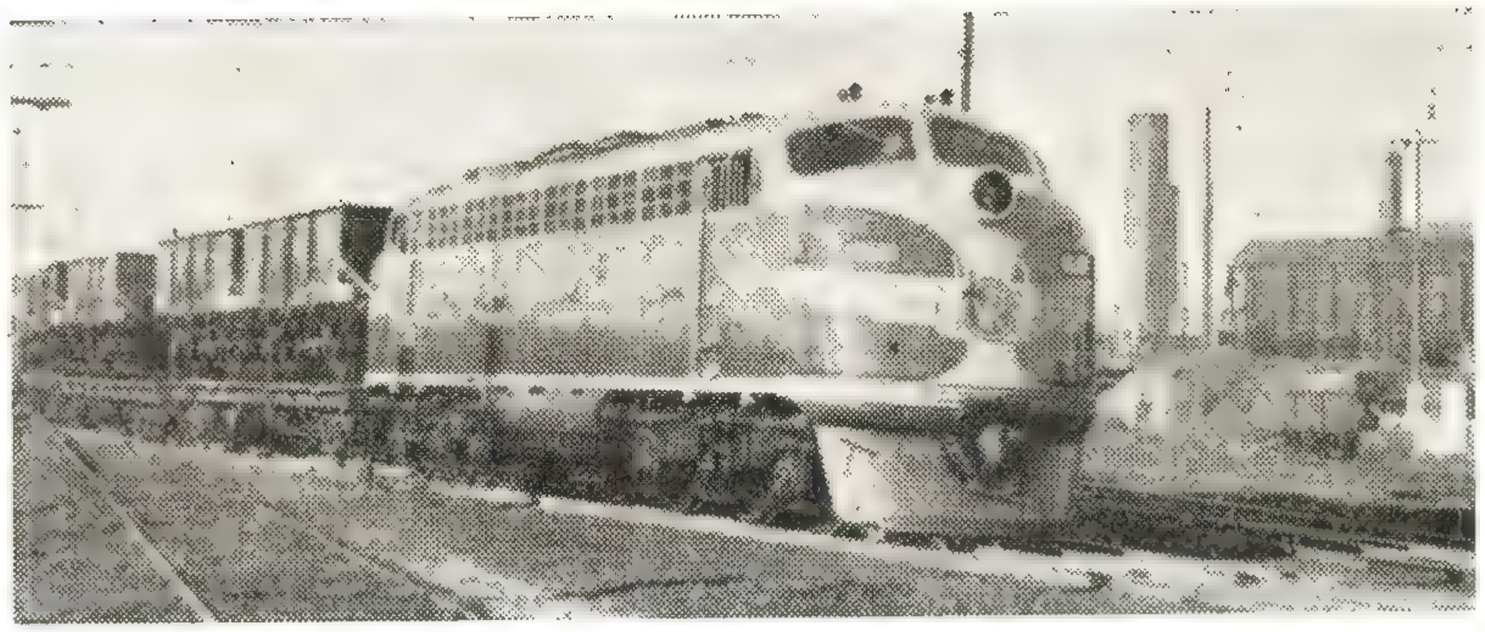
Passenger trains, Nos. 33 Down and 34 Up (North-east line) and Nos. 35 Down and 74 Up (Goulburn Valley line) have had air-conditioned cars added to their daily consist. The North-east trains use an all-steel AS (1st class) car, while the Goulburn Valley trains have two wooden cars formerly used on the Mildura Express.

SEYMOUR'S NEW YARD

The new marshalling yard north of Seymour is to be
The new marshalling yard north of Seymour was opened for traffic on 18th August. This yard, intended for the classification of Up freight traffic, is 1½ miles long, and comprises three arrival roads, seven marshalling and classification sidings, and three departure roads, with an engine road beside the two latter sections. (A plan appeared in our issue for April, 1949.)

LOCO NOTES

X class 2-8-2 No. 42, just outshopped from Newport after complete overhaul and painting, has her whistle fitted in a horizontal position behind the dome. It is enclosed in a housing similarly to those of the R class



over N.S.W.R. lines has altered this. Here Victorian Railways B class, No. 60, gets a special freight started on the first leg of her delivery trip. By an appropriate coincidence, the loading on the leading flat cars comprises GY class cars for the V.R. (Photo. by Noel F. Reed.)

"FOREIGNER" IN N.S.W.

With the limitations imposed by breaks of gauge, Australian railways have seen very little operation o the locomotives of one system over the metals o another. Testing and delivery of Clyde-built diesels

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R class 4-6-4 No. 710 has been running without deflectors during tests concerning smokebox draught, etc. The deflectors were removed to permit provision of a housing on the left hand running board for the testing engineer.

It is reported that the North Ballarat Workshops are being equipped to overhaul X class locomotives.

HEAVY WORK AT WARRENHEIP

Mr. W. Jack, of Ballarat, Vic., reports interesting (and spectacular) workings of freight trains up the Warrenheip Bank from Ballarat recently.

On 30th June, the 10.30 a.m. Up Goods was hauled by A2 class 4-6-0 and R class 4-6-4 No. 761, with A2 980 banking in rear.

On 3rd July, this train had two R's at the head, Nos. 702 and 723, with A2 941 banking.

On the following day, the leading engines were R class Nos. 723 and 715, while A2 965 brought up the rear.

NORTH-EAST WORKING BY DIESEL

B class mainline diesel-electric locomotive No. 60, "Harold W. Clapp," is assigned daily, pending the arrival of further locomotives of this class, to the working of No. 15 freight (2.15 a.m. ex-Melbourne paper train) to Seymour, returning with the 6.10 a.m. Up freight. The tonnage of the latter train is usually between 700 and 710 tons, 50 tons more than handled from Seymour to Melbourne by booster-equipped X class 2-8-2's.

BRANCH LINE CLOSED

The Burrumbeet Park branch was dismantled by a private contractor in June last. The line has not been used for some time.

"TRANS" EXPRESS BACK TO NORMAL
Thrice Weekly Service Restored

As from 4th August, thrice-weekly service will be restored on the East-West Transcontinental line. This has been made possible by the use of 3-car diesel trains on the W.A.G.R. connection from Kalgoorlie to Perth. For some time now, the W.A.G.R. have been suffering the effects of a strike of metal workers, and normal steam-hauled rail services have been cut progressively.

S.A.R. NOTES

The fourth 900 class diesel-electric loco, No. 903, entered service on 3rd July.

No further AJ and BJ class air-conditioned day cars for the "Overland Express" will be built at Islington workshops until the financial situation improves.

ENGINES FOR SALE

In one of those bursts of freakishness which enliven our daily round from time to time, a Melbourne correspondent on holiday in Warrnambool, Vic., discovered in a Burnie, Tas., newspaper a Department of Supply advertisement offering for sale fifteen Australian Standard Garratt locomotives. The engines themselves are at Clapham Junction, Qld., and application was to be made to the Department at Hobart, Tas.

These 3 ft. 6 in. gauge war babies are stated to have run an average of 40,000 miles each in service, and tenders for their purchase are returnable by 4th September next.

OUR MISTAKE—
NEW V.R. DIESEL
Test Train and Naming Ceremony

We regret that, in the last-minute rush to include the account of the test run with a special train to Seymour by the new diesel-electric locomotive of the Victorian Railways, certain incorrect information was supplied. We had been advised that the train comprised five of the new day cars for the "Overland" service, plus the V.R. Business Car, "Norman." In point of fact, the consist included a Roomette car, a Twinette car, an AJ, a BJ, a new AS (V.R. day car) and "Norman."

The driver was Mr. Frank Myer.

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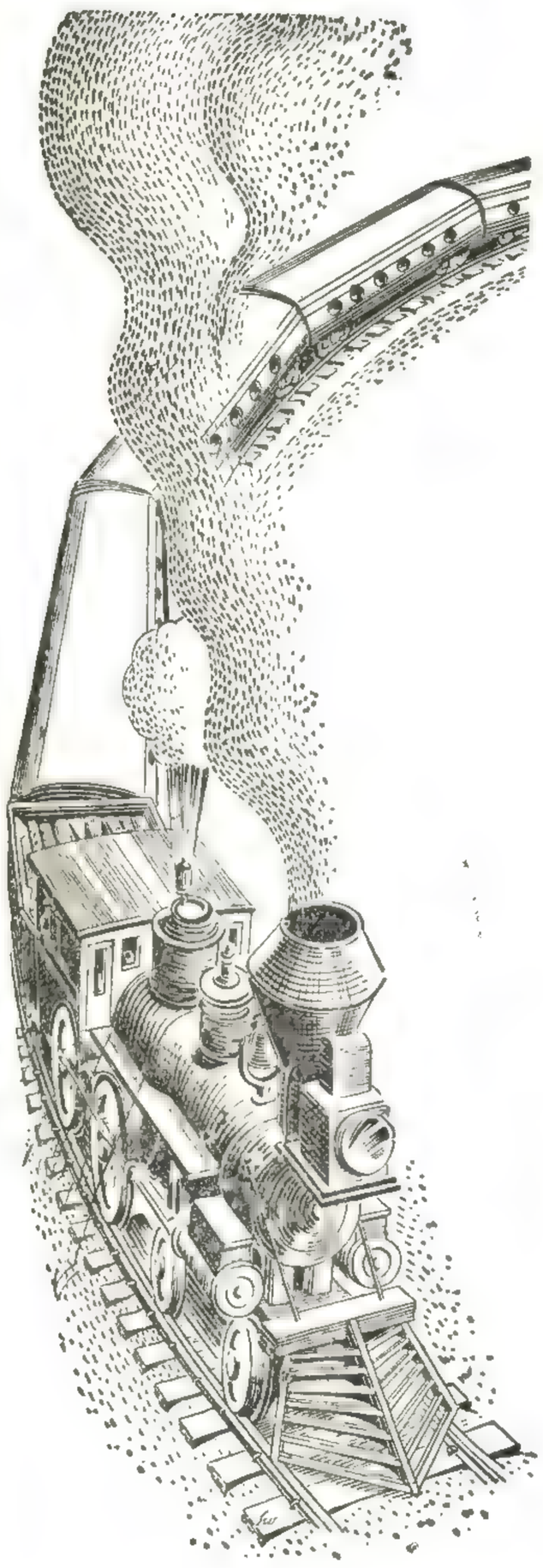

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Steam — With a Difference

INTERESTING AUSTRALIAN SOCIETY

Those not acquainted with the fascination of modern steam engines as applied to road vehicles would be more than surprised at the extent of the enthusiasm in this country for these machines. An organisation which caters for this enthusiasm is the Steam Power Unit Development Society ("S.P.U.D.S."), with branches in Melbourne and Sydney, and a membership extending throughout Australia and to overseas countries. Members are interested both in demonstrating the commercial practicability of modern steam road vehicles and in constructing and operating such vehicles themselves as a hobby. In addition, awards are made in certain cases to persons whose work the society feels should be encouraged.

In furtherance of these aims, the Melbourne branch is converting a 3-ton truck to steam operation, while individual members throughout the organisation have converted automobiles of various types, including a late-model Terraplane, to steam power. One member is building a steam caravan. Others operate original Stanley and White steam cars.

Engines Are Compact

The type of engine used should not be confused with the ponderous affairs used in the steam lorries seen occasionally in our cities. The modern steam car engine, with flash boiler and automatic fuel feed, can be as inconspicuous as a petrol or diesel engine.

Any reader interested in obtaining further information should write to one of the society's office bearers (see "Club Notice Board," this issue).

KOONDROOK TRAM

The locomotives and rolling stock of the Kerang-Koondrook tramway, formerly operated by the Koondrook Shire Council, have been sold by auction. A former T class 0-6-0 acquired from the Victorian Railways some thirty years ago brought £300, being purchased by an Elwood (Melbourne) man for scrap.

The tramway was taken over by the Victorian Railways some time ago, and is operated as a branch of that system, so that the Council's equipment had become redundant.

REALISTIC MODEL

2½-gauge, coal-fired, live steam model of N.S.W.R. 36 class 4-6-0, operated by Rev. Br. G. C. Baumgartner at St. Brendan's Christian Brothers' College, Yeppoon, Central Queensland.

MODEL RAILWAYS

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Warrant Officer Ron Tichener, R.A.A.F., spent his leisure moments trying to figure out how worth-while clockwork model trains could be made in Australia without bankrupting the manufacturers. Up to that time, with competition from British, German and U.S. makers to meet, no one had managed to do it. The war removed much of the competition, but it also brought shortages of men and materials. However, peace and subsequent discharge found the problem sufficiently solved to see "Robilt" established as something more than an idea. Business people were at first sceptical of Australian clockwork trains, but some ordered, and in a surprisingly short time orders exceeded production. Although 'Robilt" trains made no pretensions to be scale models, all possible dimensions were to ¼ in. scale, and the wide range of rolling stock was representative of full-size practice.

Ron Tichener, however, is a genuine modeller and, when he subsequently sold the "Robilt" business, turned to true scale work, under the present trade name. Many readers will have seen his ¼ in. scale, 16.5 mm. gauge reproductions of the V.R. narrow gauge locos. There is also a useful line of level crossings for HO/OO gauge —a line not produced by larger manufacturers.

In addition to industrial models of various kinds, the company is now engaged on a programme which calls for one replica of every locomotive type ever operated by the V.R., all to ¼ in. scale. They are for the Melbourne Museum, where may already be seen the famous Rogers, No. 162, together with representatives of the R, Q, and A2 (in original red colour scheme) classes. The S, X and DDE classes will follow.

Rather different is the non-working replica of the new V.R. B class diesel, No. 60. The model, which is 44 in. long, is to ¾ in scale, and stands on a length of 2⅞ in. gauge track. It was commissioned by the V.R. for public display purposes.

Ron's own models include a magnificent K4 Pacific (Pennsylvania R.R.), powered by dry ice.

EXHIBITION TIME!

"ALL HOBBIES" EXHIBITION AT MELBOURNE

30th August to 6th September

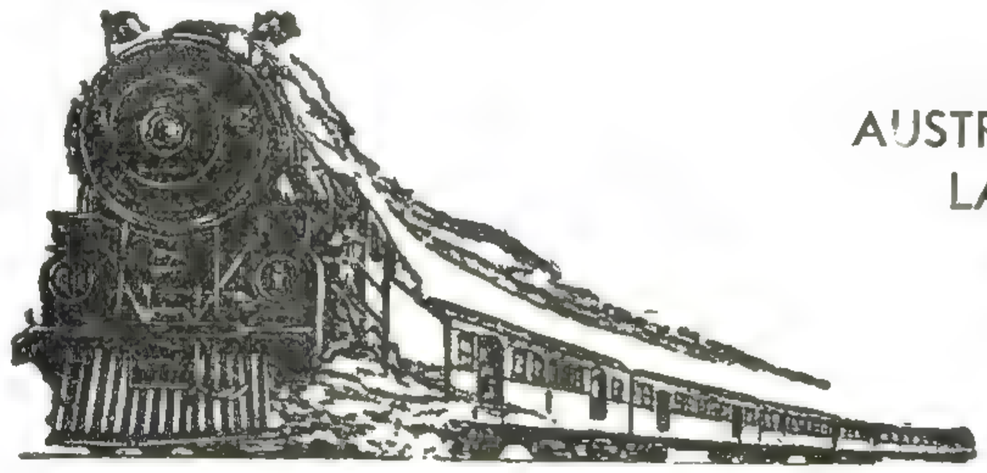
The All Hobbies Exhibition being held in Melbourne from 30th August to 6th September will be of particular interest to railway enthusiasts. The Australian Model Railway Association will have a large stand, embracing the work of both private members and commercial firms; this will be the Association s first exhibit since its formation last year. A most attractive display is planned for the stand of the Victorian Model Railway Society, both a working layout and static models being included. In addition, the N.M.R.A. (Australian Area) will be represented.

Live steam models will be displayed and operated by both the Hale's Creek Railroad and the Surrey Hills live steamers. Melbourne readers may remember the spectacular performance of these powerful models at the 1949 exhibition.

Among commercial firms represented is our good friend, Ray Pearson, well known to many readers.

Not least among all this talent, we hope, will be Traction Publications. Your editor will be present every morning, and, when possible, at other times (good-bye, annual holidays!), and will be happy to make your acquaintance personally.

Tramway enthusiasts (and those not quite so enthusiastic) will be interested in a model of M. & M.T.B. car No. 980, to a scale of 3 in. to 1 ft., also a working display of the Board's RC2 control equipment manned by members of the A.E.T.A.



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BOOK REVIEW

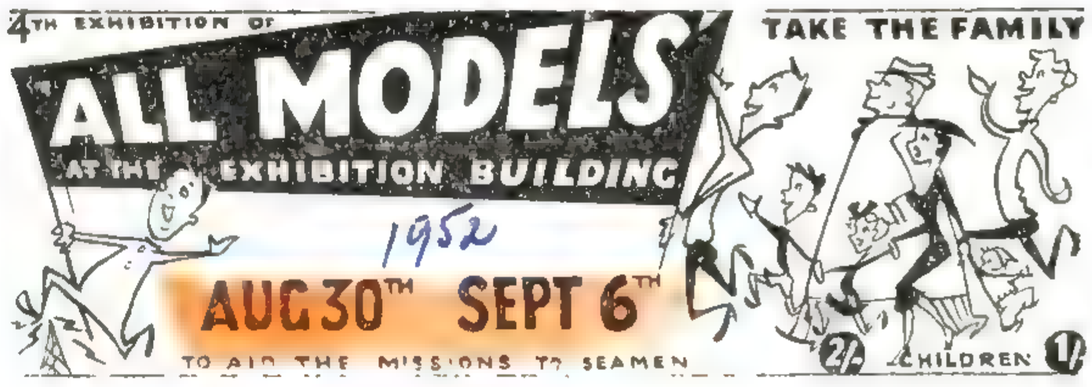
HOW TO FORM A MODELMAKERS' CLUB

(Anonymous)

(London, Modelcraft Ltd.)

By a coincidence, this book came before your reviewer's notice at a time when he was engaged in the revision of a club constitution. As a result, it may be said with confidence that the book is thoroughly worth having. In addition to dealing with the formation of a club, the authors have covered in some detail the running of such an institution. There is a third section which gives useful general information, including specimen rules, agenda for meetings, and so on. Although concerned primarily with modelmakers' clubs, the contents apply equally well to any railway enthusiasts' or other hobby society.

(24 pp., 8 in. x 5 in. — our copy Meadmore Models, 1/6.)



MODEL RAILWAY SIGNALS

By Ernest F. Carter

(London, Percival Marshall & Co. Ltd.)

This work, first published in 1948, is well up to Mr. Carter's usual standard. To those not acquainted with the author's works, let it be said that this means that Mr. Carter explains clearly and fully what signals exist on full-size railways, and why, explains the possibilities of signalling on model railways, both for elaborate and quite simple layouts, and goes on to explain in language anyone can understand how to make them. The diagrams are both clear and adequate in number.

(66 pp., 7½ in. x 5 in. — our copy McGill's Agency, 6/-.)

Club Notice Board

Adelaide Model Railroaders
meet every Tuesday night at 8.00 p.m., either at the Y.M.C.A., Gawler Place, or members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park, S.A. Phone X 3233.

Australian Electric Traction Association

MELBOURNE: V.R. Institute, 3rd Friday of each month, at 8 p.m. Secretary: W. G. Mercer, 18 Embling Avenue, Malvern, S.E.4., Vic.

SYDNEY: Railway Institute (Devonshire Street), 3rd Thursday of each month at 8 p.m. Secretary: R. Young, 37 Strathallan Ave., Northbridge, N.S.W.

Australian Model Railway Association

New members welcomed. Write to the Secretary, 105 Blake St., Reservoir, Vic.

Australian Railway Historical Society

SYDNEY: Railway Institute (Devonshire St.), 2nd Tuesday of each month. Secretary: H. McDonald, 3a Oxford St., Burwood, N.S.W.

MELBOURNE: V.R. Institute, 4th Thursday of each month. Secretary: R. T. Sloggett, 12 Avr St., Blackburn, Vic.

Brisbane Model Railway Club

Meetings held on 1st and 3rd Thursday of each month at 36 Goulburn St., Kedron, at 8.00 p.m. Secretary: C. Harrison, 110 Haig St., Stafford, N.3 (to whom all enquiries should be made). Gauges O and HO/OO.

National Model Railroaders' Association (Australian Area)
welcomes new members. Write to The Area Representative, N.M.R.A., 22 Whish Street, Windsor, N.3, Queensland.

Queensland Society of Model Engineers
meets 4th Monday of each month, at 8 p.m. Contact the Secretary, C. H. Garner, "Fleinor," Gray's Rd., Gaythorne, Brisbane, Q.

South Australian Society of Model and Experimental Engineers
holds meetings on the 2nd Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

Steam Power Unit Development Society

SYDNEY: Meetings alternate Tuesdays at 96 Newland Street, Bondi Jung. Secretary: D. McKie, N.R.M.A. House, 3 Spring Street, Sydney.

MELBOURNE: Meetings third Monday in each month at 15 Holland Grove, Caulfield, SE7. Secretary: B. P. Howard, 31 Meek Street, Brighton, S5

Sydney Model Railway Society.
meets at 273 Castlereagh Street, Sydney (4th Floor), each Monday evening from 6.30 to 9.30. When Monday is a zoned day, the meeting is held on the following Tuesday. Visitors are welcome. Bruce R. Davies, Hon. Secretary, Pacific Highway, MT. KURING-GAI, N.S.W.

Sydney Society of Model Engineers

Exhibitions every Saturday afternoon at the Exhibition Park, 190 Parramatta Road, Ashfield.

Meetings last Saturday night in each month at 8.00 p.m. in Club House, at above address. Interstate visitors given warm welcome.

Secretary: R. R. Steward, same address.

Victorian Model Railway Society
meets 3rd Wednesday of each month at 8 p.m., at the Model Dockyard, Swanston Street, Melbourne. Visitors welcome. Secretary: J. H. Hooker, 1 Shaftesbury Avenue, MALVERN, S.E.4, Vic.

W.A. Model Engineering Society
meets on the 1st and 3rd Wednesdays of the month at 8.00 p.m. in the Railway Institute, Wellington Street, Perth. Secretary: J. Norman, 54 Woodsome Street, Mt. Lawley, W.A.

LETTERS TO THE EDITOR

TOCUMWAL — DEFINITELY !

The Editor,
Railways in Australia,
Dear Sir,

The centre page picture in the May issue is definitely a view of Old Man Murray with the Tocumwal lift bridge in the background. This bridge carries both road and rail. When the bridge is required for rail traffic, gates at either end are placed across the road approaches, the train crossing at 5 m.p.h. The V.R. train uses the bridge to cross into New South Wales to connect with a 2-car diesel of the N.S.W.R. (which connects at Narrandera with the South West Mail to Sydney) in the two-gauge transhipment station at Tocumwal.

It is definitely not Nowra, as the bridge crossing the Shoalhaven is a through truss type, and is used for road traffic only. The railway station and terminus which serves Nowra (on the south bank) is on the north bank, and is the only station in New South Wales to have the name of two towns on its nameboard, i.e., "Nowra" and "Bomaderry". The latter is the village on the north bank. This is the terminus of the N.S.W.R. "South Coast Daylight" express.

Yours, etc.,
KEN SWAN.

Gordon, N.S.W.

EDITOR'S NOTE: Several other readers wrote in similar strain for which we offer our thanks. A picture by Mr. Swan of a train on the Tocumwal bridge will be used in our next issue.

FAN MAIL

M. DIXON, East Maitland, N.S.W.—Thanks. We can but try !
L. F. HOLMES, Seymour, Vic.—Many thanks indeed. Hope to write personally before long.
"SOUTHERN"—Using your article next month. Model photos would be welcome. Thanks a lot.
J. STORMONT, Homebush, N.S.W.—Corrections made last month. Further notes this issue.
F. C. NICHOLS, Ryde, N.S.W.—Thanks.
E. J. WELSFORD, Reservoir, Vic.—Thanks.
F. B. McCONNELL, South Strathfield, N.S.W.—Thanks for suggestions. Difficulty is to get news items.
W. HARTLEY, Toorak, Vic.—Thanks. Shall be interested to receive the article.

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EXCHANGE

Wish to exchange V.R. loco and train photos for similar S.A.R. and C.R. photos. Wish to buy photo of ex.-U.S. engine, now C.R. No. 78 fitted with Southern valve gear. Write L. F. Holmes, Batten St., Seymour, Vic.

TYPING

Any kind of private or business typing done. Charges moderate. 'Phone XB 6492 (Melbourne).

(Continued from page 4)

project since the war is now under way, however, with another recently approved, and it should be only a matter of time before Australian railways take their rightful place in the transport sphere, without any need to restrict road services by regulations.

The supposed vulnerability of railways in war-time has been urged by those advocating the superiority of road transport. While accurate bombing does cause delays and difficulties, techniques developed during the late war enable damaged sections to be replaced rapidly, so that only prolonged and intensive bombing has a worth-while effect. The most vulnerable points on a railway are its bridges, but this applies equally to roads.

All in all, the only reason for the eclipse of railways in the forseeable future would be their deliberate destruction by those who stood to gain from it at the expense of the community.

(Continued from page 5)

have been replaced with 100-ft. models, so that 60-class locomotives may be stabled at those depots.

When sufficient Garratts are available, it is expected they will take over the bulk of the coal and general freight traffic on the "Short North" from the 40-class Alco diesel-electrics, some of which will then be transferred to the North Coast Line and located at Broadmeadow.

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(Continued from page 3)

banned the manning of these locomotives, but in Western Australia and Tasmania the Mechanical Branch has, after extensive trials, eliminated many of the undesirable features of this particular design of Garratt, and they are rendering valuable service to-day.

The T.G.R. has bought many of these engines fr[om] the Q.R., and recently the S.A.R. received four un[its] from the W.A.G.R. for service on their 3 ft. 6 in. gauge or Northern division.

Industrial Line Has Garratts

The Australian Cement Limited at Fyansford, Victoria, own two Beyer-Garratt 2-6-6-2 locomotives and one A.S.G., formerly No. 33, for working over t[he] private line.

Queensland Railways

During 1950 and 1951, the Q.G.R. placed in service, as part of their rehabilitation programme, th[ir] Beyer-Garratt 4-8-2 plus 2-8-4 locomotives, 10[-] which were built by Beyer-Peacock, England, and twenty by their associate in Europe, Societe Fran[co] Belge de Materiel de Chemin de Fer, of Raisi[nes] France. These units have a boiler pressure of 200 lbs. per sq. inch, 51 in. driving wheels, and four 13¾ in. by 26 in. cylinders and 8 in. diameter piston valves actuated by Walschaerts valve gear. Tractive effort at 85% boiler pressure is rated at 32,770 lbs. The Belpaire Firebox, with a grate area of 39 sq. feet, heats 1,668 sq. feet of heating surface. The superhea[ter] has a further 453 sq. feet. Overall length is 90[ft.] 0-3/8 in. Total weight is 136.73 tons, of which 77.1 tons is available for adhesion. Coal space is fo[r] tons of coal and front and rear tanks combined h[ave] a capacity of 3,800 gallons of water.

S.A.R. Order Similar Type

The South Australian Railways have ordered 10 similar units from French builders, for service on t[he] Northern Division (3 ft. 6 in. gauge).

Largest for N.S.W.R.

The N.S.W.G.R.'s Garratt locomotives on order will be of the 4-8-4 plus 4-8-4 wheel arrangement, weighing in the vicinity of 260 tons, will be approximately 108 feet long and develop in the vicinity of 60,000 lbs. tractive effort. These Garratts, numbering 50 in [all] will be classed A.D.60, and will form the largest class of Garratt locomotives in any one State in Australia.

World-wide Use

Thus it will be seen that there are many adaptations of the Garratt locomotive in Australia. Throughout the world, there are well over 100 different designs in[use] in over 36 different countries, ranging from as nar[row] as 2 ft. gauge to 5 ft. 6 in. gauge. Their ability to handle heavy loads over difficult sections of track has demonstrated the flexibility of this type of motive power over the conventional type of locomotive.

Railway administrations who operate Garratts sh[ow] that repair, maintenance and running costs are lo[w] in proportion to actual work performed. The gre[ater] tractive effort in each engine unit has enabled, in s[ome] cases, the retirement of two conventional type locomotives, and, as a consequence, fuel consumption is lowered and extra crews' wages dispensed with, thus reducing running expenses and increasing ton mileages.

The fact that the N.S.W.R. has ordered 50 Beyer-Garratts has shown their belief in this type of motive power and will enable them to retire some obs[olete] locomotives as well as boost the motive power of [the] State, and will greatly assist in the movement of freight traffic.

John C. Beckett

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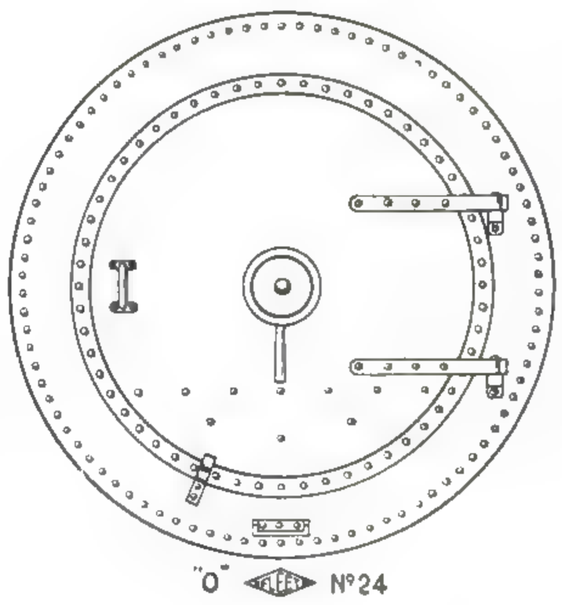

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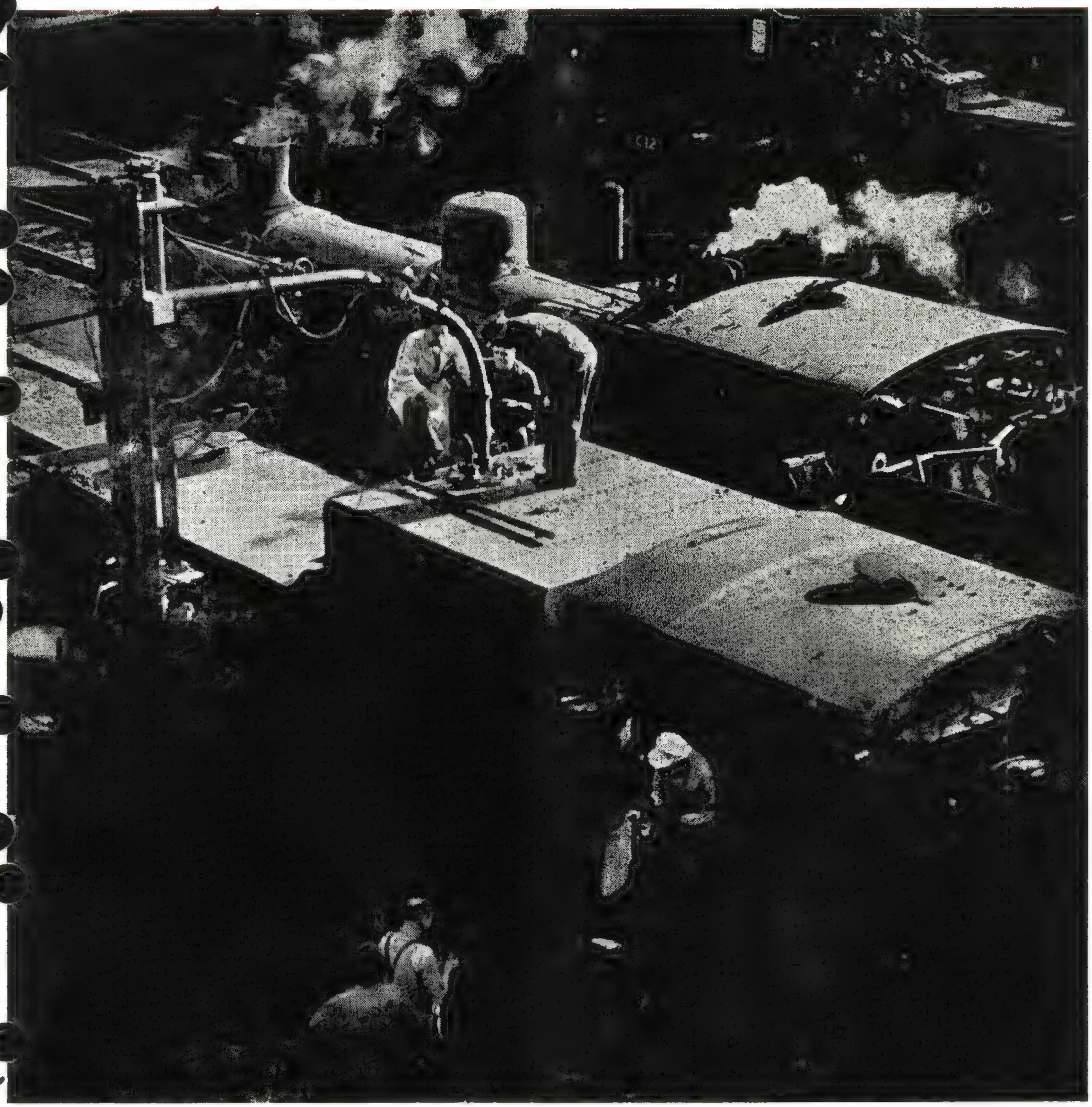
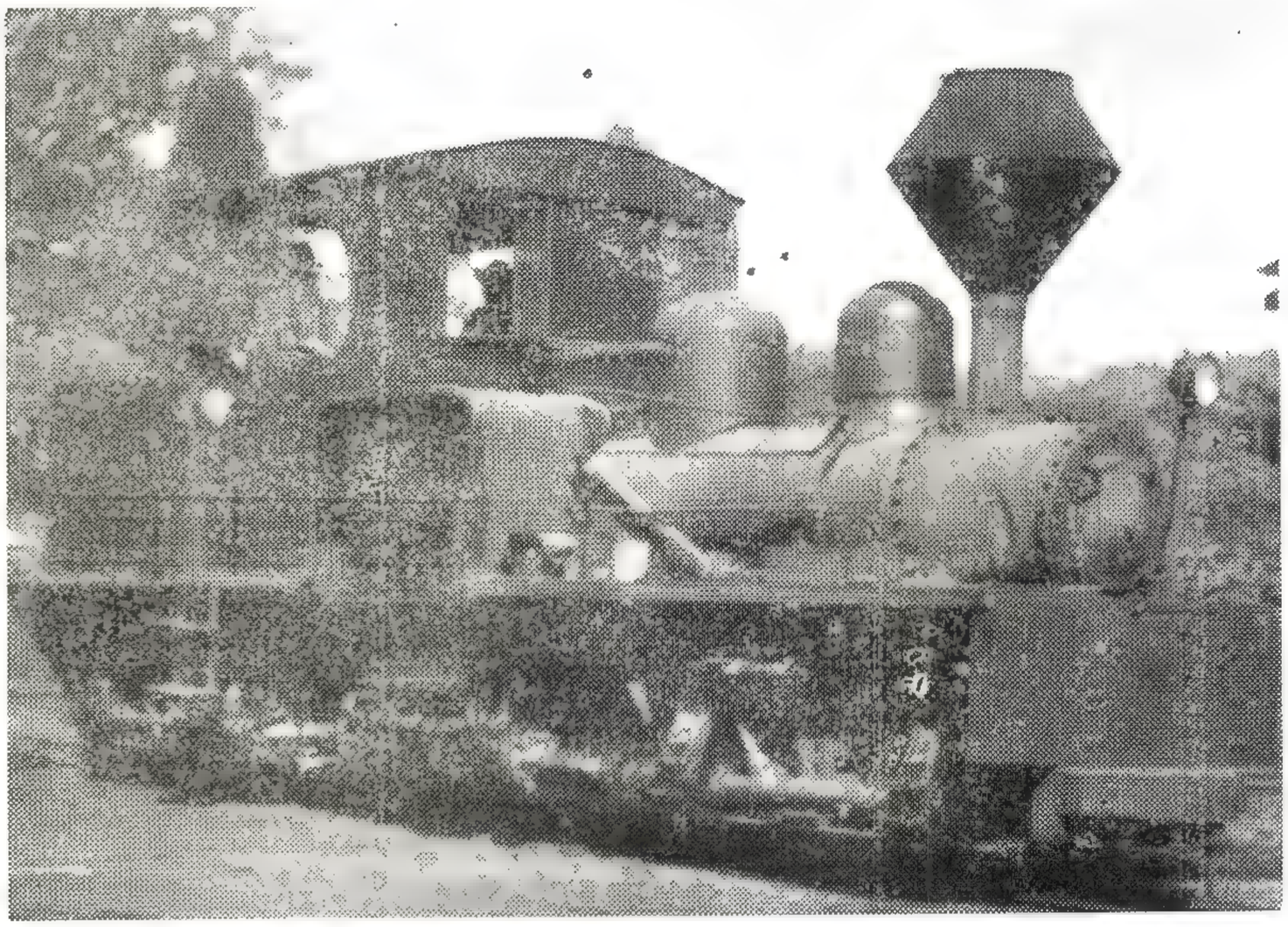
Railways in Australia

The Magazine About Australian Trains





MORETON CENTRAL MILL LOCOS.

by

"SOUTHERN"

The Moreton Central Sugar Mill at Nambour, like most Queensland sugar mills, has an extensive trackage in 2 ft. gauge for the haulage of cane from the scattered canefields.

Two locos. are worthy of close study and, as will be seen from the illustrations, one is a Shay-geared loco, and the other has an outside Stephenson's link motion.

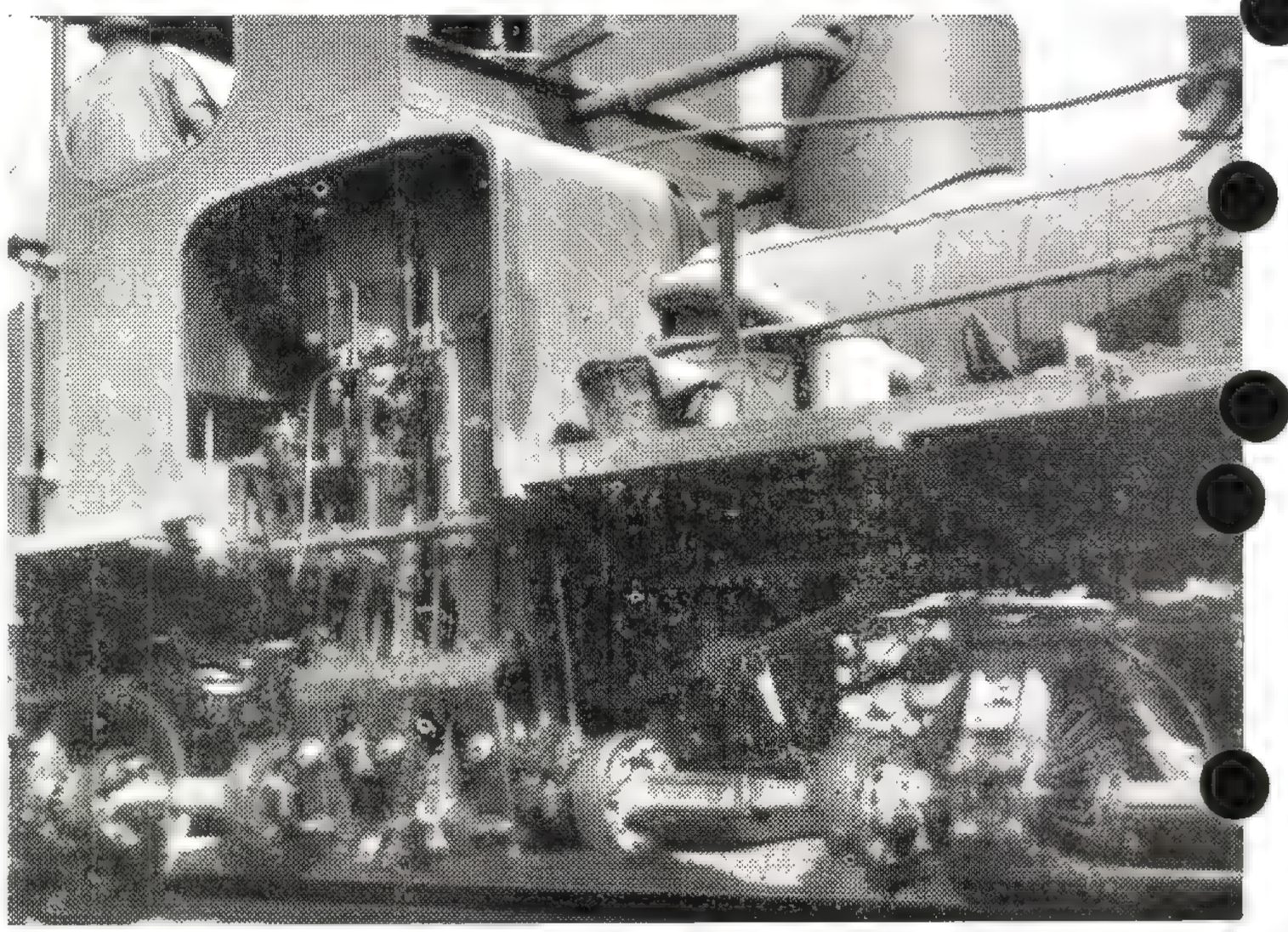
The Shay was originally built in U.S.A., whence four came to Queensland; one went to the Canungra (South Queensland) Sawmill Tramway, another to Buderim-Palmwoods Tramway—a 20 ton loco to run on 2 ft. 6 in. track; and finally two, each 12 tons, were purchased by the Mapleton Tramway, a 2 ft. gauge line, owned by the Shire Council, running between Nambour and Mapleton.

The type of country traversed would account for the selection of this type of engine. Canungra nestles in a valley surrounded by the rugged terrain of the Macpherson Ranges. Buderim is situated on the top of a mountain, likewise Palmwoods and Mapleton, while Nambour lies in their hollow, all in the rough Blackall Range, 80 miles north of Brisbane.

The Moreton Mill purchased the two 12 ton Shays for cane hauling, 40 years ago. The Council took over the line, and extended it into Mapleton, and ran a daily service for passengers, timber, fruit and dairy-produce; it soon was considered a "white elephant." Both locos were then sold to the Moreton Central Mill for the total of £80.

The severity of the work done on the steep grades is seen in the large dent and buckling in the smokebox, which was often red-hot during these climbs. The mill stripped them, and utilised the best parts to make the engine shown. They carried two 6 in. cylinders 6 in stroke, geared 3 to 1 from crankshaft to wheel; the

(Continued on next page)



To those unfamiliar with Shay geared locomotives, the Moreton Central Mill engine shown on this page will present an odd appearance. Actually the illustrations do not show clearly one of the most noticeable features of these engines —the off-centre mounting of the boiler, to allow for the vertical cylinders and motion. (Photos by the author.)

A picture of "Moreton", the more conventional locomotive described in this article, appeared in a recent issue of "Railways in Australia".

Railways in Australia

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TRAINS HER MAJESTY DID NOT ORDER

This Month's Fairy Tale!

Air-conditioned trains, ordered by the Commonwealth Railways for the East-West transcontinental route, have been the subject of uninformed reporting by a London newspaper. This journal, allegedly quoting a "colonial newspaper," stated that two trains built in Germany, and awaiting shipment to Australia, had been ordered personally by Her Majesty the Queen.

Apart from the fact that Her Majesty is far from being the sort of monarch who would order two complete trains for a visit of three or four months, it is difficult to see how the trains would be expected to negotiate Australia's notoriously varied gauges, the existence of which is drummed into every British schoolboy by his geography teacher. If this were not enough, it should have been fairly obvious that trains scheduled for completion in late 1952 and requiring two months or so in transit, could scarcely be of use on a Royal Tour due to commence in February.

In point of fact, Royal Trains in British countries are not ordered by the Sovereign. In Australia, they are normally made up from cars provided for the Governor-General, State Governors, the Railway Commissioners, and other officials, and revert to those uses. A similar practice was followed in Canada; in South Africa, the opportunity was taken, when planning for the tour of His Late Majesty, King George VI, to build a new train in time for the tour, which it was intended to use subsequently in regular long-distance luxury service. (It is now the famous "Blue Train.")

Hollywood has long stressed that, to a newspaper reporter, all things are possible, and the staff of the "colonial newspaper," shrouded in merciful anonymity, uphold the rule.

Why Germany?

Genuine concern has been expressed in some quarters, however, that the order should have been placed in Germany, when British carriage builders are second to none. The melancholy fact was that, at the time of placing the order, no British firm could accept it, because of the very heavy orders already in hand. The rolling stock was needed urgently, and Germany was able to build it. The well-known thoroughness of the workmen of that country will undoubtedly produce rolling stock of a quality which will go some distance to make up for disappointment in other directions.

(Continued from previous page)

former has two universal joints, with a squared slot and bar connecting them (see close-up photo).

The other loco — "Moreton," is an 0-6-0 made in Germany 52 years ago; Moreton Mill purchased it from a North Queensland mill only a few years later. It was Moreton's first loco, and has been in continuous service since then. Boiler pressure is 180 lbs., cylinders 8½ in. diam., and weight 120-130 tons. The valve gear is an outside Stephenson's link motion. It will be noted that the connecting rod, and the eccentrics are all mounted on the third driver.

The mill also possesses "Maroochy"—an 0-4-2—plus two Fowlers (English) purchased in 1924, and a Ford V8 mounted on four wheels.

The Fowlers haul a 140-ton load of cane over 1 in 40 grades, and "Moreton" readily handles 120-140 tons.

THIS MONTH'S COVER

Our cover illustration, reproduced through the kindness of the Victorian Railways, shows an oil-burning "Walschaert" A2 class 4-6-0 of that system being refuelled. Alongside is a coal-burner, of the same class, but fitted with Stephenson motion. In the background is a C class 2-8-0.

CAN YOU HELP?

The Commonwealth National Library is anxious to obtain copies of early issues of the Australian Railway Historical Society's Bulletin. The National Library keeps a complete file, as far as possible, of every book and magazine published in Australia, and requires the Bulletins to complete its set.

Copies required are Nos. 1 to 105, and 107-108. If you can help, write to:

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MODERN CARS NEEDED

Planning For The Future

By
JAMES ALLAN

EDITOR'S NOTE

Cars such as Mr. Allan describes, with independently slung wheels, and an extremely low centre of gravity, have been in service in Spain for two or three years in the "Talgo" train.. A similar train, known as "Train X", is now under test in the U.S.A.

To-day, in Victoria, there are only two major train services which can be said to be at all modern. Now, as further improved rolling stock is being built and delivered, we must consider whether the new standards of design are really sufficiently advanced to hold their own in the years to come.

When new equipment is designed for railways, a radically different approach must be made compared with that on the competing airways and bus lines. The need for far-sighted planning lies in the fact that railway cars must have a life of at least twenty years. The competing vehicles are seldom used for more than five or six years, and their routine replacement keeps them up-to-date in design. Just imagine an efficient company using a bus built in 1932, or an aircraft of the same vintage!

But, on the rails, rolling stock of this age is considered to be quite modern. This means, then, that the cars we build now must be of sufficiently advanced design to be able to compete unchanged with continuous modernisation by competitors for, perhaps, a decade.

Passenger car construction has become so much a matter of tradition that design has advanced only in such matters as roller bearings and coachbuilders' refinements, since pioneering days. Our most modern cars teeter along on high wheels much the same as did those behind Stephenson's "Rocket", and passengers still sit four feet above the ground.

Perhaps our platform and coupling systems have done much to perpetuate this top-heavy design, for railway trains have neither ruts to cross nor bogs to negotiate, and can ideally be built only a few inches above rail height. Independent wheel suspension will eliminate heavy cross axles, thus reducing unsprung weight and keeping car floors as low as those of a modern motor car.

Independent suspension for railways presents no insuperable problems. Present technical advances could supply a smooth and stable application and make possible an all-round frame which would give the coachwork designers an entirely new basis on which to work.

With car floors, and, hence, the centre of gravity, so lowered, double-deckers immediately become possible—perhaps even desirable on electrified lines, to eliminate the need for increased pantograph height on lower cars. And with two-level cars, the dead-weight-per-passenger ratio really begins to drop.

For longer journeys, it is essential that people should travel by rail because they want to do so, not because they have no choice. Here, exploitation of the unique advantages of railways will attract the large numbers of habitual travellers that the lines must have to support heavy capital outlay.

Perhaps the most important feature pertaining to rail travel alone is the passenger space offering. The dining cars, roomy washrooms, and observation cars of the modern train are big attractions to a travelling public who would otherwise be cramped into their seats for the entrise journey in the buses and 'planes of the competitors.

When our present grubby platforms and racketty trains are replaced with neat, low kerbs, fast, modern transportation, and trained, unharassed staff; when our draughty stations have the comfortable, [illegible]

(Continued on page 5)

Typical of present-day long-distance cars on the Victorian Railways are the buffet car "Wimmera" (above) and the day cars (right) used on the "Spirit of Progress" and other major trains. Fewer than 40 of these cars are in service. (V.R. Official Photos.)

BOOK REVIEW

"THE STANIER PACIFICS OF THE L.M.S."
By Cecil J. Allen

(London, Ian Allen Ltd., 1950)

This book, one of the most attractive we have yet seen of the A.B.C. Locomotive Series, is the third in the "Famous Locomotive Types" set. In it Mr. Allen, writing in his usual competent style, succeeds in getting away from the more stereotyped format and content of such books. We liked particularly the stimulating account of the visit of No. 6229 "Duchess of Hamilton", heavily disguised as No. 6220 "Coronation", to the U.S.A. The description of work in the firebox while the boiler still carried 50 lb. of steam would make good reading anywhere. The events leading up to the building of the first L.M.S. Pacific, after the stifling period of "small engine" policy, the technical details of the three classes subsequently built, descriptions of famous runs, comparisons with other famous engines, and really excellent photographs, go to make a really first class little book. Australian readers, accustomed to think of English locomotives as being on the small side, may be surprised to find that the Stanier Pacifics are more powerful than most Australian passenger engines. (64 pp., 5in. x 7¼in. Our copy McGill's Agency, 4/9d).

"EUROPEAN RAILWAYS"
Available in Shops

"European Railways" (see advertisement on back cover) can now be obtained from certain retailers. In Melbourne, from McGill's or the Technical Book and Magazine Co., and in Sydney, from O Gauge House. Copies may also be obtained direct from Traction Publications, 29 Seymour Grove, Brighton Beach, S5, Vic. In all cases, the price is 2/6d per copy.

"European Railways" is published in England every two months, and gives up-to-date news and attractive pictures of railways in Britain and on the Continent. It is designed for overseas readers, and is printed throughout on art paper.

THE STEAM LOCOMOTIVE OF TO-DAY
By M. P. Sells, O.B.E.

(London, The Locomotive Publishing Co. Ltd.)

This very thorough and competent book, which has been written for professional locomotive men, is refreshingly different from many instructional manuals in that it is highly readable to the non-professional enthusiast. The author has been Chief Mechanical Engineer of the Nigerian and the Rhodesian Railways and writes without the somewhat rigid outlook of men who have grown up with the "laws-of-the-Medes-and-Persians" traditions of larger undertakings. The functions of every part of a steam locomotive, the physical and mechanical phenomena of steam propulsion, the mathematics of tractive effort, problems of braking

(Continued on page 13)

(Continued from page 4)

waiting rooms and conveniences of the standard provided by the airways, then railway profits will look after themselves.

INTENSIVE WORKING
Schedules for V.R. Diesels

With three of the new B class diesel-electric locomotives (Nos. 60-62) in regular service, September will see these locomotives operating an intensive schedule in freight operation.

Following the arrival at Melbourne on 10th September at 7.20 a.m. of B60 on No. 80 Up Passenger (the Mildura Express), this loco and B61 were timed to work daily, Sundays excepted, until 30th September, as follows:—

B60: Train No. 15, 2.10 a.m. Newsgoods (a fast freight train also carrying newspapers), load 500 tons. Melbourne-Bendigo (due 6.00 a.m.); return on 6.30 a.m. Through Goods (due Melbourne 10.45 a.m.).

B61: Train No. 15A, 2.15 a.m. Newsgoods, load 700 tons, Melbourne-Seymour (due 5.05 a.m.); return on 6.10 a.m. Through Goods (due Melbourne 8.15 a.m.). These times differ slightly on Mondays.

B60-B61 (coupled): Train No. 77A, 2.00 p.m. Fast Goods, load 1300 tons (all vehicles fitted auto-couplers), Melbourne-Ararat (due 6.45 p.m.); return on No. 38, 7.50 p.m. Fast Goods (due Melbourne 1.00 a.m.).

B62: Timetable varied according to day of week, but included 1.30 a.m. Through Goods, Benalla-Melbourne (due 5.50 a.m.); 9.40 a.m. Through Goods Melbourne-Bendigo (due 1.25 p.m.); 2.30 p.m. Through Goods, Bendigo-Melbourne (due 6.30 p.m.); 7.30 p.m. Through Goods, Melbourne-Seymour (due 10.00 p.m.); 11.00 p.m. Through Goods, Seymour-Melbourne (due 1.40 a.m.). The last two trains run on Saturdays only, being replaced on other days by the 8.00 p.m. Melbourne-Benalla (due 12.25 a.m.), and the 1.30 a.m. Benalla-Melbourne listed above. Loads to Bendigo are 700 tons, to Seymour or Benalla 700 tons (all vehicles auto-coupled).

On all trains listed above, the number of vehicles may not exceed 75.

Mileages, from Melbourne, are: Ararat, 131; Benalla, 121¼; Bendigo, 100¾; Seymour, 61¼. The run to Ararat involves the negotiation of the notorious Inglis-ton Bank, and heavy grades are encountered also between Melbourne and Seymour.

BOILER DRUM FLAWS
Non-Destructive Detection Method

Ultrasonic waves are now used to detect flaws in riveted boiler drums. A pulse of energy in the form of logarithmically damped ultrasonic waves is emitted by a transmitting quartz crystal at a frequency of approx. 2½ Mc/s. When the transmissions strike a discontinuity in the shell plate, part of the energy is reflected, the reflections being picked up by another crystal. These reflections are shown on a cathode-ray tube screen as a blip against a conventional time base display.

SILVERTON LOCO LIST

A reader, Mr. Arthur Reynell, of Lindfield, N.S.W., writes to point out that the correct numbers and names of the new Silverton Tramway 4-8-2's are are follows:

22 "Justin Handcock."
23 "Thos. B. Birbeck."
24 "Malcolm Moore."
25 "H. F. (Gerry) Walsh."

The list given on Page 7 of our January/February issue was incorrect in certain cases.

Railway Round-up

News from Australian Railways

SYDNEY STATION TO EXPAND

Possible New Terminus for North Line

When the present Sydney terminus of the New South Wales Railways was completed in 1906, its size and "extravagance" were roundly condemned. Yet, by the outbreak of World War II, it had already become congested, despite the addition of eight through platforms for suburban trains, and the building of underground railways through the city. The suburban station, known as "Central", is itself being enlarged with the addition of four underground platforms. Now plans are announced for sweeping improvements to "Sydney Steam Station" (as the main station is known), which is handling 43% more traffic than in 1939.

The parcels docks at the southern end of No. 1 platform, and the extensive offices beside the platform are to be removed, permitting the construction of two new platforms. Two additional tracks are to be built through Redfern tunnel (there are 10 now, with two more under construction for electric trains), and a new Parcels station is to be built between Regent Street station (the former Mortuary station) and the tunnel, with a frontage to Regent Street.

This scheme will be costly, but is the only one considered practicable, as it is not desired to move the terminus from its very convenient location in the city.

It is possible, however, that a separate terminus may be built for Northern line trains. St. Leonards, a station on the North Shore suburban line, has been suggested as it is readily accessible to a large population, and the Railways Department owns an extensive property there.

Big Deficit for N.S.W.R.

Largely, it is claimed, as the result of a strike by railway fitters, the New South Wales Railways report a deficit for the financial year 1951-52 of £2,450,000, in place of an estimated surplus of £25,000 as forecast in the State budget. The estimate was based on increases in passenger fares of 10 per cent., and in freight charges of up to 166 2/3 per cent.

DOCTOR WANTS DIESELS

Electrification Opposed

Dr. L. J. A. Parr, the Labour member for Burwood in the New South Wales State Parliament, urges cancellation of the scheme for electrifying the N.S.W.R. main Western line to Wallerawang. He claims that diesel-electric locomotives will do all that is possible with electrification, and without the heavy capital cost.

Railway authorities, commenting on Dr. Parr's proposal, said that contracts already signed total £9,627,000, and that work, which commenced 18 months ago, is well advanced on the Parramatta-Penrith section. In addition, 40 electric locomotives are on order.

The Minister for Transport (Mr. Sheehan) claims to have "no prejudice either way".

OUTER SUBURBAN IMPROVEMENTS

The Up Refuge Loop at Rooty Hill, on the Western line, has been extended through the station to the Sydney end, with a crossover from the Up Main at the western end. A new platform has been erected on the loop, so that Up suburban passenger trains can stand clear of the Main, thus expediting through services.

GARRATT ON SHOW

No. 6002, first of the new 60 class Garratts in service on the N.S.W.R., was on show to the public at Sydney station on 30th and 31st August.

FACE-LIFT AT SYDNEY STATION

A new American-style Country Booking Office has been opened at Sydney station. The attractive layout, and the facilities provided are expected to boost rail travel.

Some weeks previously, another typically American facility was provided, in the shape of luggage lockers. Situated near the cloakroom, the lockers are opened by inserting sixpence in a slot, which also releases the key. Use of the lockers is available until 11 p.m., after which time any luggage remaining is removed to the cloakroom by station staff.

Thrill for Gippsland Passengers

"LUXURY" TRAVEL

Gippsland travellers had a pleasant surprise on 1st September when they went to board the 1.25 p.m. Up passenger train and found instead of the standard AE and BE cars hauled by an A2, a gleaming air-conditioned train, hauled by a new diesel-electric locomotive.

This happened when a test train was taken down to try out the diesel over the Gippsland main line. It followed the morning passenger train down and was to have preceded it back to Melbourne, but late running led to the substitution of the Special for the regular passenger train.

The locomotive used was No. 60, "Harold W. Clapp", and the train comprised two V. & S.A.R. Joint Stock AE or BE cars, two standard V.R. all-steel air-conditioned cars, two joint-stock reclining-seat cars, V.R. buffet car "Tanjil", and a joint-stock CE van, total eight cars. The train left Bairnsdale with the van leading, American-fashion, the guard riding in the last car. At Sale, the train was reversed by means of the track layout there.

BACK TO COAL

C class 2-8-0, No. 22, of the Victorian Railways, fitted for oil burning. This measure, adopted during the period of chronic coal shortage, is now to be rescinded, and the 26 locomotives of the class re-converted to burn coal. The high price of oil fuel is the cause. (Courtesy Victorian Railways.)

OUR RETAILERS

If it is not convenient for you to take out a yearly subscription, you can buy "Railways in Australia" regularly from one of the following retailers:

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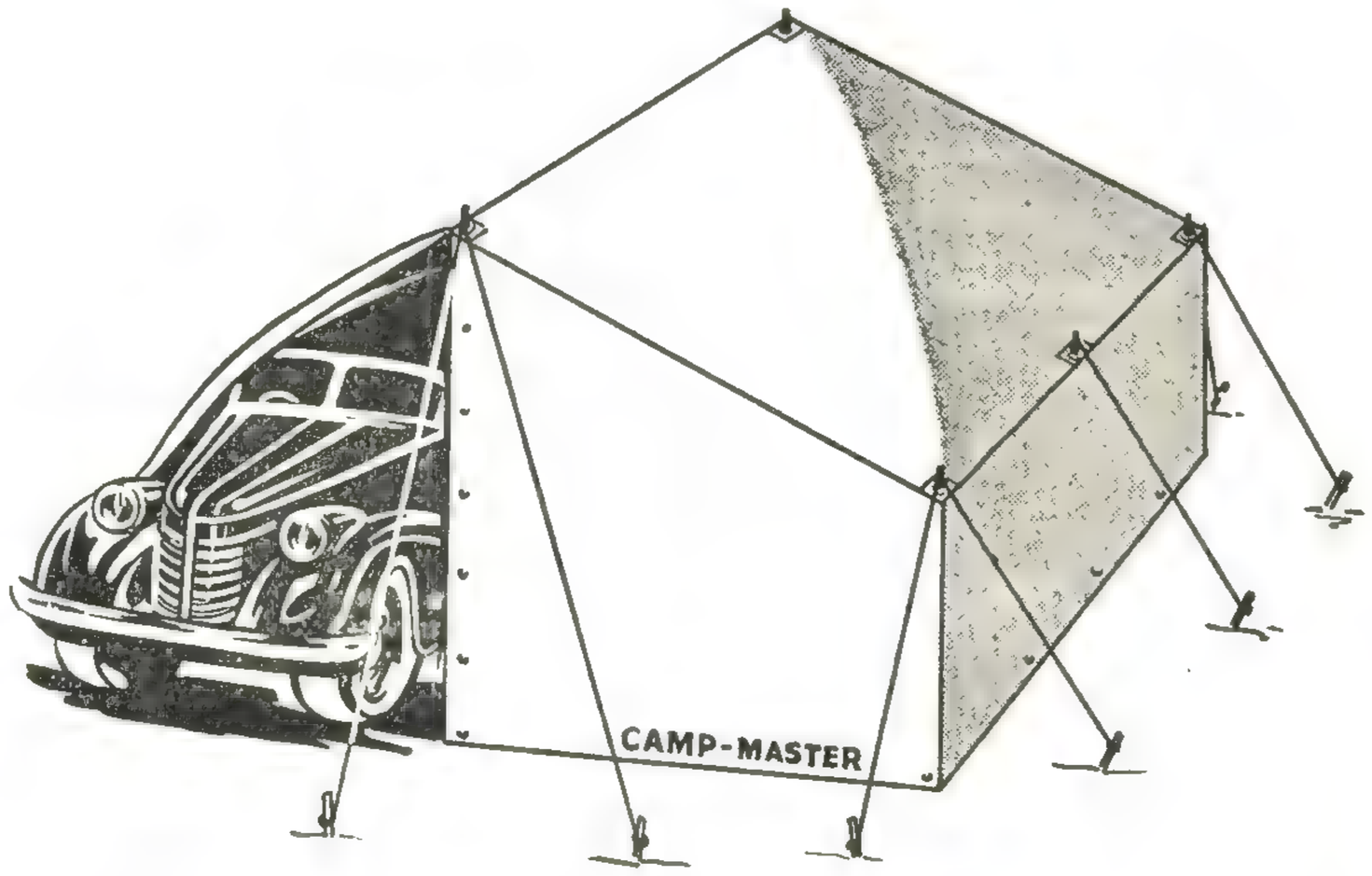

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FLINDERS STREET INTERLUDE

A few minutes' wait on No. 9 platform at Melbourne's Flinders Street station recently provided interesting railfan fare. Over the middle road (No. 12 road), between Nos. 9 and 10 platforms, passed in rapid succession: A D4 class 4-6-2T with bulk mail van 4D from the Viaduct to Jolimont yards; A2 class 4-6-0 No. 940 with joint stock cars as follows: green BE (number missed), 5BE, 7BE, 6BE, and V.R. van No. 36CE, ex No. 10 East to Port Melbourne, D3 class 4-6-0 No. 657 with an empty ballast train (2 QR cars with a Z van at each end) was standing at No. 9 platform while workmen took out ballast in connection with the construction of a big drain. Up and down Sandringham and Broadmeadows trains used No. 8 platform while this was in progress.

DIESEL DELIVERIES

Following arrangements to slow the delivery of B class diesel electric locomotives, 26 of which are on order from the Clyde Engineering Co. Ltd., it has been announced that Nos. 62 and 63 are due in September.

THE BLUE-AND-GOLD LOOK

The "Blue-and-Gold" bug seems to have bitten the Victorian Railways. Until recently, only the "Spirit of Progress" and the four S class 4-6-2's had the honour of being painted in these colours. Now the new B class diesels have joined them, to be followed soon by the L class mainline electric locomotives. Another recruit to the colours is diesel-electric (formerly petrol-electric) railmotor No. 56 RM, together with trailer No. 29 MT. These cars have blue roofs, and visible underbody fittings of the trailer are in gold.

LOCOMOTIVE VARIETIES

Some unusual locomotive working has been seen in recent weeks on V.R. expresses. On one trip, the "Spirit of Progress" was headed by two R class 4-6-4's. It is rarely that this august train is deserted by the S class Pacifics. More recently, the Mildura Express was hauled by C class 2-8-0 between Melbourne and Ballarat. It would be interesting to know whether the better performance on uphill grades compensated for the 50 m.p.h. speed limit placed on this class.

DIESEL SHOWS ITS PACES

Reader L. F. Holmes, of Seymour, Vic., took this fine shot of Victorian Railways' B class diesel-electric locomotive No. 60, "Harold W. Clapp", at the head of a special train "just south of Seymour." Make-up of the special was (from the leading end): V. & S.A.R. Joint Stock sleepers "Weroni" and "Tantini", day cars 1BJ and 2AJ, V.R. passenger car 14AS, and business car "Norman", total 291 tons. The occasion was the demonstration run of No. 60 on 15/7/52, on which a speed of 81 m.p.h. was reached.

DINING OUT — NEW STYLE

The venerable dining car, "Campaspe," which has been at North Melbourne Car and Wagon Shops for some time, has been rebuilt for use on the Breakdown Train. A kitchen, dining room, bunkhouse, and showers have been provided.

BACK ON THE JOB

Bulk Mail Van, No. 1 D, damaged in the Serviceton collision last year, has been returned to service. This all-steel car is now painted in the new bright red livery.

NARROW GAUGE NEWS

Colac-Beech Forest Line

Despite the discontinuance of passenger service, and rumours of impending abandonment, the Colac-Beech Forest narrow gauge line is still very much alive. Two trains run each week for freight service, passengers being able to travel in the guard's van under the "usual conditions." Motive power is provided by G class Garratt No. 41 Na class 2-6-2T's Nos. 11 and 14, and one other, are at Colac for use when required.

Whitfield Branch

Another narrow gauge line in the news recently was the Wangaratta-Whitfield line. Service on this branch is provided by a diminutive motor-trolley, with a freight train usually once a week. One recent week, a motorist managed to collide with the freight at a level crossing, happily without injury to himself or the train crew, though his car was wrecked.

Moe-Walhalla Line Cut Back Further

Third of the four narrow gauge lines to provide news is the former Walhalla branch. Having been abandoned beyond Platina, — miles from Moe, the line has now been further diminished. The current financial crisis forced the closure of the local industries at Platina, and trains now run only to Erica, — miles. A group of Melbourne rail fans are interested in restoring the Platina-Walhalla section as a living museum of narrow gauge railroading.

NEW BRIDGE AT INDOOROOPILLY

Tenders, closing on 2nd March, 1953, have been called by the Queensland Department of the Co-ordinator-General of Public Works, on behalf of the Department of Railways, for the construction of a railway bridge across the Brisbane River at Indooroopilly. Situated on the main suburban line, between Brisbane and Ipswich, this work will be part of the quadruplication scheme now in progress, and which is preliminary to the electrification scheme for Brisbane suburban railways.

W.A.G.R. Strike Ends

BIG RESTORATION TASK AHEAD

The disastrous strike of metal trade unionists on the West Australian Government Railways ended on 16th August, after having paralysed the system for six months. It is anticipated that the effects will not be overcome in less than a year, and the loss to the State's economy is placed at £4 million.

Of 354 locomotives normally in service, only 83 remained in useable condition at the end of the strike, making it impossible to restore train services to any degree for some time. Long haul service will be restored first, followed by progressively shorter runs.

All Diesel on the Desert Run

STEAM LOCOS TAKE A BACK SEAT

The introduction of diesel-electric locomotives has wrought great changes in the motive power position on the standard-gauge, East-West Transcontinental line of the Commonwealth Railways. At the Parkeston Loco Depot, Kalgoorlie, W.A., (the western terminus), there are, besides the diesels, only five steam locomotives, and only one of these is in use. This is No. 11, an elderly G class 4-6-0 saturated steam job, formerly a passenger-hauler, and now used for yard work. A C class 4-6-0 express passenger engine, No. 63, is available as a stand-by. The other three, all out of commission, are Ga No. 6 (4-6-0), Ka No. 44 (2-8-0), and Cn No. 75 (4-6-0).

The only steam locos regularly used for mainline work are the new L class 2-8-2's. Six of them work between Port Pirie and Port Augusta, S.A., with occasional trips out along the "Trans" to Cook. Other older steamers are used in yard work at this end of the line, but most of the former fleet of nearly 80 are out of action, and many are expected to be sold for scrap. The L's themselves will disappear soon, as they are intended for the Port Augusta-Leigh Creek service when the new standard-gauge line is in use. By this time, it is intended to obtain lighter diesel power—around 1,000 h.p.—for miscellaneous services on the main line.

All-Diesel Services Planned

Ultimately, it is planned to replace all steam locomotives, both on the standard gauge and the narrow gauge lines, with diesels, as part of a £5 million improvement plan. No date has been announced for completion of this scheme.

LUXURY TRAINS FOR "TRANS"

Dramatic Speed-up Coming

Following the introduction of the two new air-conditioned trains built in Germany and due in Australia this year, it is planned to speed up the East-West transcontinental expresses, with an ultimate target of an 18-hour running time, less than half the present schedule. For these trains, which will be the last word in Australian rail travel, an extra fare will be charged. The existing rolling stock will be used for slower services at ordinary fares, but on a faster schedule than that now in force.

V.R. Loco "Loses Face"

Following a fatal level-crossing collision with a circus van at Euroa, Vic., S class streamlined Pacific loco No. 301 "Sir Thomas Mitchell" had the front-end streamline casing removed at Seymour roundhouse. In this condition, she presented a rather odd appearance hauling the "Spirit of Progress". The head-on appearance is not unlike that of the semi-streamlined C class 4-6-0 of the Commonwealth Railways. An illustration will appear in our next issue.

Faster Trains

In a general speed-up of passenger services, several important trains on the Victorian Railways will have as much as one hour cut from running times during the next few weeks. Full particulars will appear next month.

Longer Trains on S.A.R.

To facilitate the running of longer trains hauled by diesel-electric locomotives in multiple, the following crossing loops on the "Hills" line of the South Australian Railways have been extended: Long Gully, Murray Bridge, Nairne, Callington, and Bridgewater.

Railcar Turntable

A new turntable for the Adelaide railcar depot is to be erected near the Morphett Street bridge.

Automatic Gates

First of the 20 sets of automatic crossing gates on the S.A.R. was installed at Croydon, in April last, followed by another set at Alberton. Both locations are in the Adelaide suburban area.

Rail Car to Houseboat

A former 70-ft. Vice-regal car, used by three kings and two queens on visits to South Australia, as well as by the various State Governors, is now mounted on a barge at Goolwa, S.A., on the Murray River, as a home for convalescents. Built in 1885 by the Mann Boudoir Carriage Co., U.S.A., the massive platform car still retains the original furniture in its three bedrooms, dining room, lounge, bathroom, and kitchen. It was built of cedar and mahogany, and panelled with rosewood, for the cost—fantastically low by present-day standards—of £4,043/12/2!

HALLADE TRACK RECORDER

Special Car on W.A.G.R.

During the last twelve months, a Track Recorder Car has been operated by the W.A.G.R. over most of the far-flung tracks of that system. The car used is a former passenger car, class ALT, No. 88, which contains passenger accommodation and cooking facilities for the operators, of whom two are always on duty when the car is moving. Recording trips last as much as a fortnight.

On many railways, Hallade Recorders are mounted in ordinary passenger cars, in a compartment set aside for the purpose, but this was not possible on the W.A.G.R., all passenger cars on which have a bulkhead over or near the bogie centre. (The Hallade apparatus is mounted directly over the bogie centre.)

The intention is for the car to be worked over the entire system as frequently as possible, track maintenance programmes being adjusted to meet the needs shown by the Recorder.

The Recorder

For the information of those not familiar with the Hallade apparatus, it is a device originally invented by a former Chief Engineer of the Chemin de Fer de l'Est, in France. A clockwork motor drives, through a series of gears, a drum which carries the recording paper, and which moves at a constant speed. Above this are mounted pendulums which move in sympathy with the movements of the car; one records rolling, another the effects of acceleration and braking, a third lurching, and a fourth bouncing; these movements are recorded with the aid of hard-pointed styluses and carbon paper, and appear as four "wiggly" lines, plotted against time. One of the operators records manually the passing of each half-mile post.

Hallade recorders are in use in this country on four other railways—the Commonwealth, New South Wales, Victorian, and South Australian systems.

ODD SPOT

The Lancaster and Chester R.R., in South Carolina, U.S.A., is a "short" line famous for having one Vice-president for each of its 31 miles of track. A new one has been added—the Superintendent of Atomic Power!

Own Your Own and Save Money

An interesting sidelight on the operating possibilities of allegedly unprofitable branch lines comes from Maine, U.S.A. The Maine Central R.R. decided to abandon a 33-mile branch from Burnham Junction to Belfast, back in 1925. The three municipalities concerned pooled their resources to buy the line, on which they have since operated passenger and freight services at a profit.

S.A.R. HAS DIESELS, TOO!

Following protests by a reader from Adelaide, S.A., that the new S.A.R. diesel-electric locos have not received adequate attention in our pages, we make amends by printing his photograph of a twin-unit diesel at Mile End Diesel Servicing Depot. This new installation is situated on the west side of Mile End passenger station. The raised tanks hold sand for overhead filling of loco sandboxes; the big tanks are for oil fuel. The locos are No. 900, "Lady Norrie", and No. 902.

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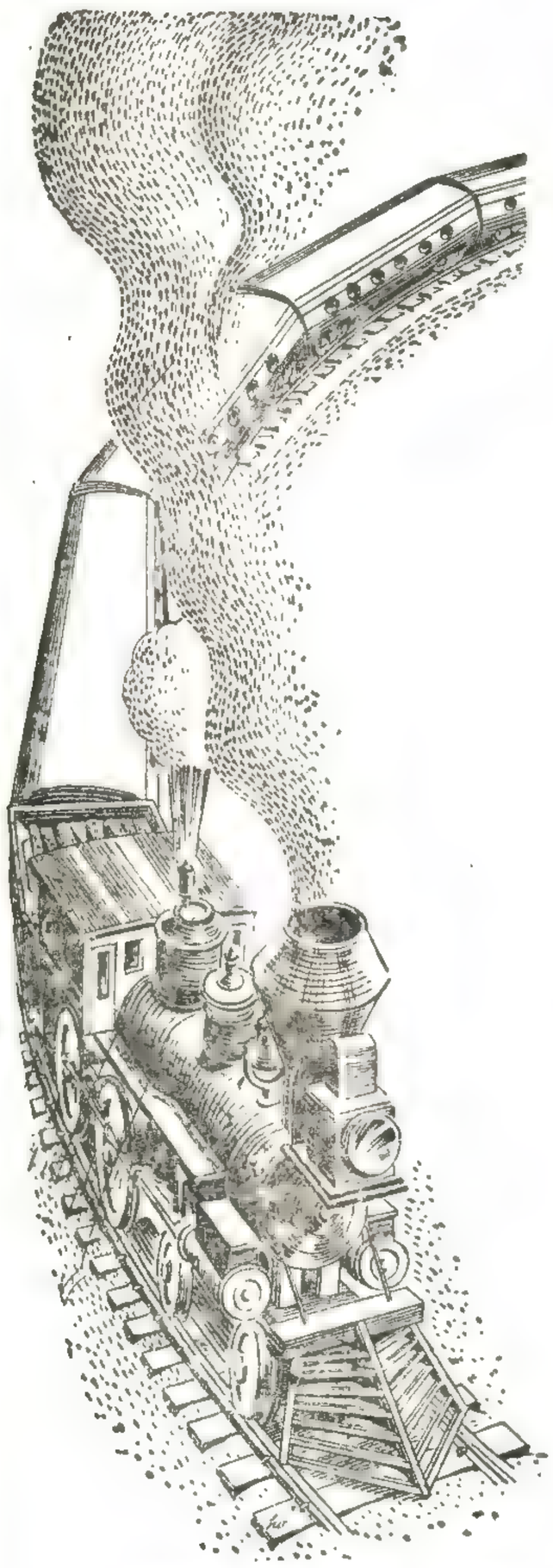

You may join in the fun of being a RAYMO (Railway Modeller) the Pacemaker way — and you can share in the "sweat and toil" which seems to be the lot of RAYMOS who come our way!

Just now, for instance, we're forming an O Gauge Department, and we're looking for all the help we can get from RAYMOS everywhere to assist us to decide just what we should stock, how we should stock it, and in what manner we should package it and offer it for sale.

If you have ever made up your mind how your local hobby shop would be run if YOU had it, here's your chance to see your ideas put into practice — and there are OPEN ORDERS for 5/- for each idea incorporated into our policy.
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OVERSEAS ITEMS

NEW BRITISH LOCOMOTIVE
Coal-fired Gas Turbine Ordered

The North British Locomotive Co., Ltd., is to build a coal-fired, gas turbine locomotive for use on British Railways. With mechanical drive, it will have a rating of 1,800 b.h.p., and will be equipped with a Parsons "exhaust-heated" gas turbine. (In this design, an air heater is used in place of the conventional heat exchanger; the products of combustion do not pass through the blades.) The locomotive has been ordered by the Ministry of Fuel and Power. Twelve locomotives of similar, but larger design, are in service or on order for the Union Pacific Railroad, in the U.S.A. These engines, however, use electric drive.

The new British machine will join a fleet of experimental locomotives of various types. There are already gas turbine (using oil fuel), diesel-electric, diesel-mechanical, and straight electric mainline express locomotives in service, from which the Railways Executive should be able to obtain comparative data of the greatest importance.

The gas turbine locomotive should not be confused with the famous "Turbomotive" of the former L.M.S. Railway, which used steam turbines in place of piston drive in an otherwise conventional layout.

ITALIAN BOILERS FOR B.R.

Ten Class 9, heavy 2-10-0 freight locomotives on order for British Railways are to be fitted with experimental "Franco-Crosti" boilers, a new design which is said to have proved successful on the Continent. Just to be safe, the engines are designed to take the orthodox type of boiler also! Considerable fuel economy is claimed by the Italian inventor of the new boiler.

INDONESIAN RAIL CHIEF VISITS AUSTRALIA

The Head of the Transport and Commercial Section of the Indonesian Railways visited Australia recently to study transport systems in this country. He stated that although much money had been spent on permanent way and on the purchase of new rolling stock there was still much to be done towards rehabilitation. The Indonesian Railways are government-owned, having been nationalized after the formation of the Indonesian Republic.

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Contributions Invited

LETTERS FROM THE CHAIR

Hello there!

This month the editor has managed to allow me a little more space, and we hope that it will be possible to continue on at least this scale. If you have any ideas which might interest other model railroaders, grab your pen and let me have them for publication. Articles of any reasonable length, hints, queries, or just odd ideas, are all welcome. I can use one photograph or line drawing, so choose your best picture or send a layout diagram.

This month you will find an article on model railroading from a somewhat unusual angle; you may not agree with the author, but he gives you something to think about. Don't miss the picture on page 15, which shows what can be done when space is not the first consideration.

Next month I hope to tell you about the fine part played by model railways in the All Models Exhibition held in Melbourne.

Until then, cheerioh all!

THE ARMCHAIR MAN.

FREELANCE MODELLING SUITS ME!

By Philip A. Knife

In the June/July isue of "Railways in Australia" last year, Mr. K. N. Lowry wrote an article on freelancing in model railways. I am a freelancer myself, and back him up in what he has said. (Find me, on the L.M.S., or N.Y.C.—or any railway—a complete railway that goes round in circles, as most model railways do! A railway is meant to "go places" and not to double back on itself, getting nowhere).

To model properly a prototype railway or, most likely, a part of it, means to reproduce all the physical features, buildings, etc., near the layout. With freelancing, one is free to do what he likes with his railway, may be getting ideas from prototype railways. An example of this is my B class caboose. The front or "verandah" end is typically, but not quite, British practice; the middle or "living quarters" is American type; and the end, with a cupola, is typically Victorian. Although my railway is only in the constructional stage, you will never find a scale model, or complete likeness to any other type of rolling stock. This is true freelancing.

A sound method of planning and building a freelance railway is to take the cart before the horse, and start by planning a complete countryside, with all its physical features, towns, etc., then build the railway to fit it. Instead of building a complete railway, it is best to model only a part of it. The main reason for this is, of course, distance. In O gauge, a scale mile is 120 feet, and in OO it is approximately 67 feet. Modellers who have a large space for the layout—say 12 ft. x 7 ft.—can model a fairly large terminus. The main line, leaving this terminus "disappears" into a tunnel. The railway is supposed to lead to another terminal, or to a junction on the other side of the mountains, but actually runs into turnround loops and sidings and, maybe, a turntable or traverser. Trains may be held there until it is time to return from the other "terminal". This type of layout is very realistic when working, and offers the operator plenty of interest and enjoyment.

For those who, like myself, have only a small space available, the best thing to do is to model part of a country line or branch. Bogie stock may not be used, being replaced by 4- and 6-wheeled stock to give a country-like or aged appearance. There is just as much scope and realism in this type of layout as in the big one. To make it look still more country-like, only tank engines can be used—of the 0-6-0 and 0-6-2 wheel arrangements. This type of line can be

Club Notice Board

Adelaide Model Railroaders
meet every Tuesday night at 8.00 p.m., either at the Y.M.C.A., Gawler Place, or members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park, S.A. Phone X 3233.

Australian Electric Traction Association
MELBOURNE: V.R. Institute, 3rd Friday of each month, at 8 p.m. Secretary: W. G. Mercer, 18 Embling Avenue, Malvern, S.E.4.
SYDNEY: Railway Institute (Devonshire Street), 3rd Thursday of each month at 8 p.m. Secretary: R. Young, 37 Strathallan Ave., Northbridge, N.S.W.

Australian Model Railway Association
New members welcomed. Write to the Secretary, 105 Blake St., Reservoir, Vic.

Australian Railway Historical Society
SYDNEY: Railway Institute (Devonshire St.), 2nd Tuesday of each month. Secretary: H. McDonald, 3a Oxford St., Burwood, N.S.W.
MELBOURNE: V.R. Institute, 4th Thursday of each month. Secretary: R. T. Sloggett, 12 Avr St., Blackburn, Vic.

Brisbane Model Railway Club
Meetings held on 1st and 3rd Thursday of each month at 36 Goulburn St., Kedron, at 8.00 p.m. Secretary: C. Harrison, 110 Haig St., Stafford, N.3 (to whom all enquiries should be made). Gauges O and HO/OO.

National Modol Railroaders' Association (Australian Area)
welcomes new members. Write to The Area Representative, N.M.R.A., 22 Whish Street, Windsor, N.3, Queensland.

Queensland Society of Model Engineers
meets 4th Monday of each month, at 8 p.m. Contact the Secretary, C. H. Garner, "Elsinor," Grav's Rd., Gaythorne, Brisbane, Q.

South Australian Society of Model and Experimental Engineers
holds meetings on the 2nd Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

Steam Power Unit Development Society
SYDNEY: Meetings alternate Tuesdays at 96 Newland Street, Bondi Junc. Secretary: D. McKie, N.R.M.A. House, 3 Spring Street, Sydney.
MELBOURNE: Meetings third Monday in each month at 15 Holland Grove, Caulfield, SE7. Secretary: B. P. Howard, 31 Meek Street, Brighton, S5.

Sydney Model Railway Society.
meets at 273 Castlereagh Street, Sydney (4th Floor), each Monday evening from 6.30 to 9.30. When Monday is a zoned day, the meeting is held on the following Tuesday. Visitors are welcome. Bruce R. Davies, Hon. Secretary, Pacific Highway, MT. KURING-GAI, N.S.W.

Sydney Society of Model Engineers
Exhibitions every Saturday afternoon at the Exhibition Park, 190 Parramatta Road, Ashfield.
Meetings last Saturday night in each month at 8.00 p.m. in Club House, at above address. Interstate visitors given warm welcome.
Secretary: R. R. Steward, same address.

Victorian Model Railway Society
meets 3rd Wednesday of each month at 8 p.m., at the Model Dockyard, Swanston Street, Melbourne. Visitors welcome. Secretary: J. H. Hooker, 1 Shaftesbury Avenue, MALVERN, S.E.4, Vic.

W.A. Model Engineering Society
meets on the 1st and 3rd Wednesdays of the month at 8.00 p.m. in the Railway Institute, Wellington Street, Perth. Secretary: J. Norman, 54 Woodsome Street, Mt. Lawley, W.A.

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HELPFUL HINTS For Railway Modellers

By The Armchair Man

From our model railway library have been culled the hints which are given below. We cannot vouch personally for all of them, but have selected those which seem, from our own experience, to be sound.

Lubricate Those Drills

Small drills, which are always breaking, can be made to stay in one piece longer if they are lubricated. Since oil is an arch-enemy of good soldering, it is suggested that paste solder flux be used when drilling parts requiring subsequent soldering. (And don't neglect to wipe the drill clean afterwards — flux is a corrosive.—Ed.)

"Rocks" from Balsa

Balsa wood, put through a mincing machine, makes realistic rocks; smaller sizes can be obtained from further crushing in the mincer. (And, if you don't want domestic strife, or balsa in your rissoles, clean the mincer afterwards!).

Lettering Problems

The difficulty of obtaining neat lettering on car sides —and even the best penmen have trouble with HO cars—can be overcome by having a rubber stamp made of lettering used extensively. Care must be taken in applying the paint, but unsatisfactory work can be removed with a turpentine-soaked rag. (The range of type-faces for rubber stamps in this country is not always adequate for model railway work, but I have used a linotype slug in the same way.)

SYDNEY MODEL TRAIN DATES

Events of interest to model railway enthusiasts will take place at the Exhibition Park of the Sydney Society of Model Engineers as follows:—

11th October: 0 Gauge Train Competition.
18th October: General Exhibition.
15th November: Field Day for Trains.
20th December: 0 Gauge Train Trials.

Admission is 1½d. for adults, 3d. for children. The Park is at 190 Parramatta Road, Ashfield, and exhibitions commence at 2.30 p.m.

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EXCHANGE

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TYPING

Any kind of private or business typing done. Charges moderate. 'Phone XB 6492 (Melbourne).

(Continued from page 5)

and lubrication, are all discussed and illustrated profusely with diagrams of great clarity. There is also a section on failures, one on firing and the duties of firemen, and another on workshop practice. It is interesting to note that this book had its beginnings in an instruction manual for the African locomotive running staff of the Nigerian Government Railway. The present volume, twice re-written, appeared last year.

(250 pp., 8½ x 5½ in., plus folded diagrams, cloth cover; available from J. O. Smith, 9 Campbell Street, Punchbowl, N.S.W.)

RAILWAY PHILATELY

Although they can scarcely be described as "books", the specimen postage stamps sent to us for review are definitely worthy of discussion in these columns. The philatelists among our readers will remember the comments on railway stamps some months ago by Frank Richards, and his enthusiasm is easily understood on seeing the attractive mint (i.e., unused) stamps from eight railway-minded countries. One of the finest is a 4 yen indigo stamp from Japan which carries a beautifully engraved reproduction of a Rogers-built (or so it appears) 2-6-0. Some countries, such as Switzerland, favour a rather modernistic approach, but most offer accurate illustrations, either of railway history, or present-day working.

Prices range from 1/6 for a set of four stamps, to 16/- for a single specimen (see also prices quoted in the A.R.M. advertisement in our April issue). Write or call at the A.R.M. Hobby Shop, 322 Military Road, Cremorne, N.S.W.

LETTERS TO THE EDITOR

COMMENT FROM ENGLAND

The Editor,
Railways in Australia,
Dear Sir,

I was much interested in reading Mr. Einsiedel's journeyings on the New South Wales Railways — always my favourite system — and can agree when he suggests that the approach to the Bethungra Spiral in the Up "Riverina" might be announced on the train's loud speaker installation. On a journey on that train, I almost missed the Spiral myself, through not knowing of it before hand. In one point I think Mr. Einsiedel is in error. He says that the line from Wallangarra was till recently single back to the junction with the North Coast line at Maitland. The double track, however, commenced at Branxton, 14 miles north of Maitland.

—Yours, etc.,
CECIL L. H. WAY,
Ruislip, Middx., England.

FAN MAIL

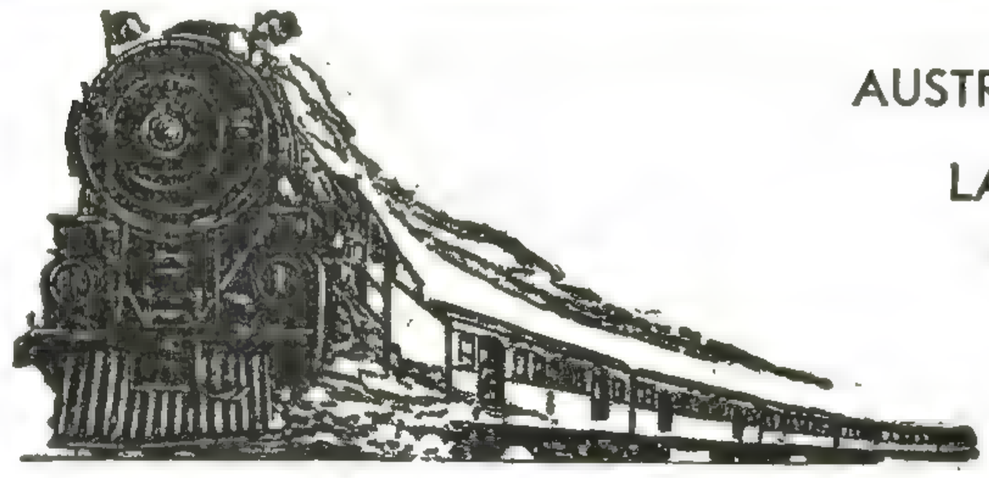
W. MOORE, Childers, Qld.—Change noted. Cane loco pictures would be of interest. Thanks for comments.

J. J. GUY, Launceston, Tas.—Change noted. Remarks appreciated.

J. C. ANSELL, Kilburn, S.A.—Noted, thanks.

A. REYNELL, Lindfield, N.S.W.—See next month's front cover!

J. DEANE, Bondi Junction, N.S.W.—Thanks for good wishes.



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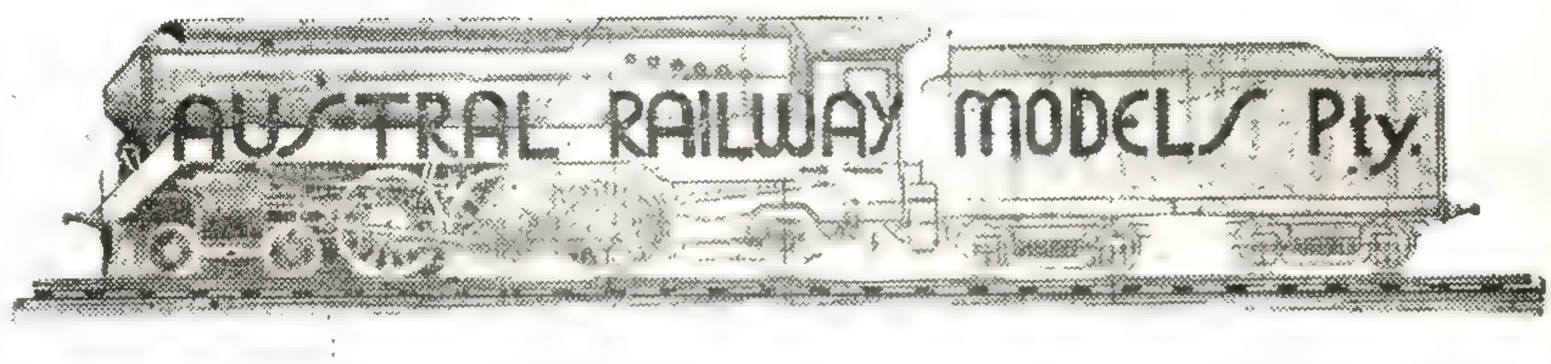

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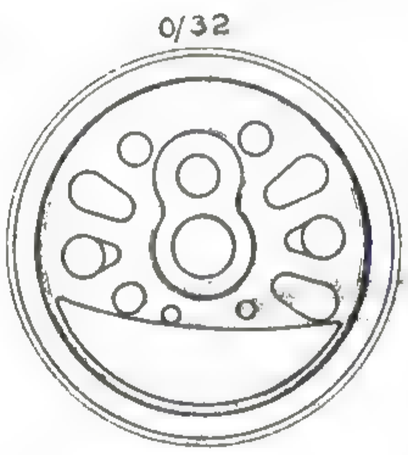

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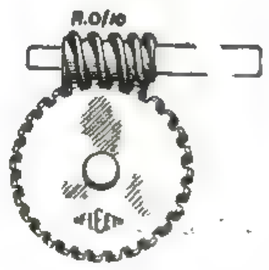

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N.S.W.R. IN MINIATURE
An Attractive Model

Although fairly common in the U.S.A., operation of model railway system by a full-size railway undertaking is comparatively rare in this country. The only system to do so in a big way is the New South Wales Railways. Their model, in HO, is exhibited annually at the Royal Easter Show in Sydney, and our illustration shows this year's exhibit. Considerable attention is paid to authenticity of detail, and the trains operated are representative of N.S.W.R. practice; they include the streamlined "Daylight" expresses, and the more sombre Melbourne Limited express. Among the locomotives this year was a model of the new 60 class Garratts which anticipated the prototype in service by some three months!

In addition to present day trains, those of the earliest days are shown. One of the latter can be seen in the foreground.

(Illustration by courtesy Victorian Railways.)

ARTICLES WANTED

in Australia, we shall be glad to have your manuscript for publication. Articles of any length can be accepted if they are otherwise suitable. Illustrations are welcomed, but bear in mind that one or two first-class pictures are better than three or four second-rate prints. We do not pay for contributions at present; your reward must be the same as ours — the interest and gratitude of readers!

CORRESPONDENCE

The Editor is most grateful for the many letters and news items received, and will acknowledge them as soon as possible. Correspondence is still beyond our capacity to handle at present.

Acknowledgement

The photograph used on last month's cover was the work of reader D. Cannon, of Sydney, N.S.W.

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Railways in Australia

EMERGENCY ISSUE
Vol. V, No 9

PRICE
1/-
PLUS
POSTAGE

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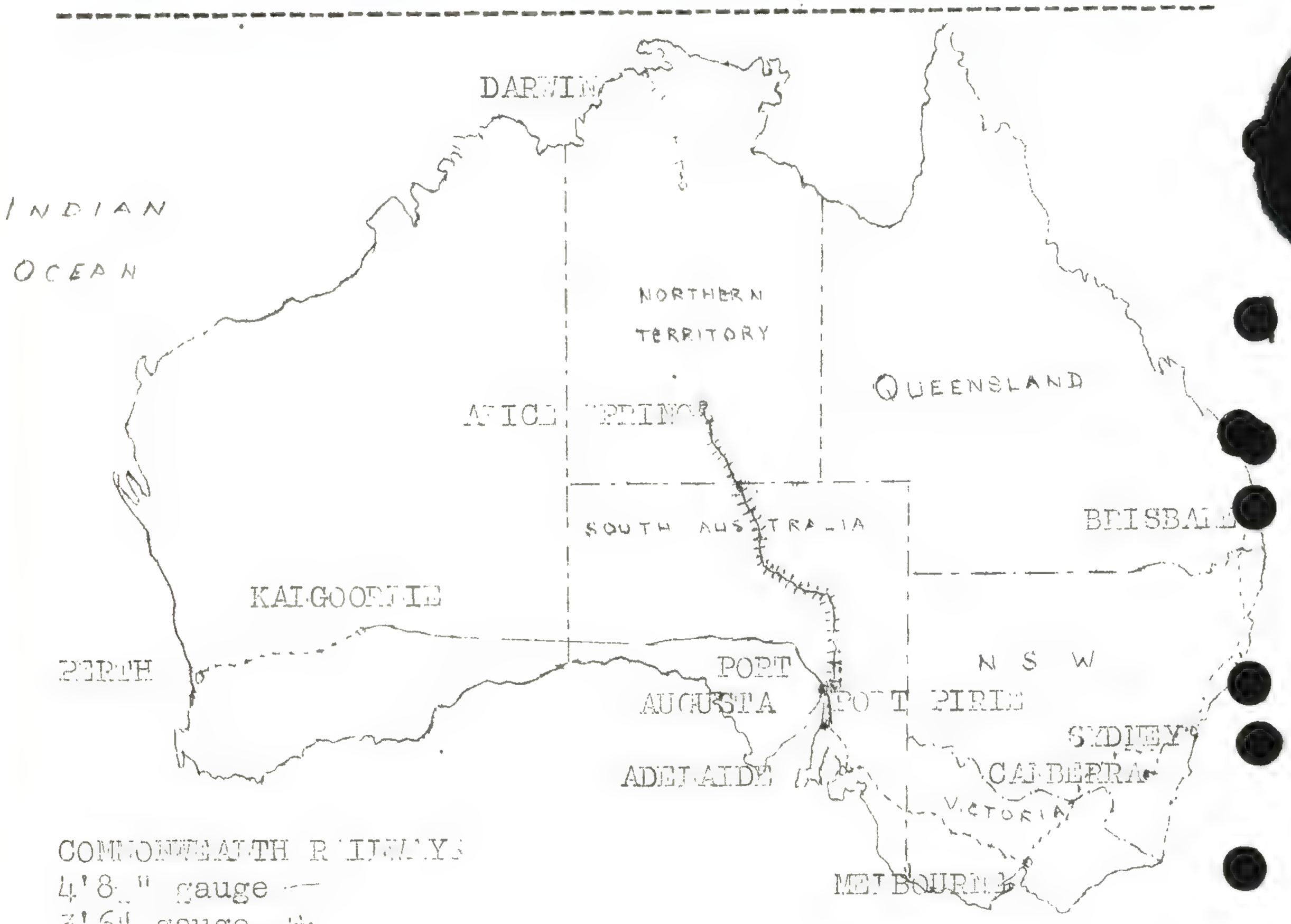
"COMRAILS" LEADS!

As has already been indicated in these columns, trans-Continental rail travel in Australia has been improved out of all recognition by the sweeping changes introduced by the Commonwealth Railways on their standard-gauge, East-West line during the last two years. First came the Budd Railcars, then complete dieselization of all through services. Then, late in 1952, Comrails received from Germany two complete luxury passenger trains - the finest, without a doubt ever



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HERR BODE'S MASTERPIECE

The two trains, each comprising nine cars, were built in Germany by Wegmann & Co. of Kassel; the proprietor of this firm, Herr Bode, an elderly gentleman with the soul of a true craftsman, wished the cars to be his masterpiece, and fitted them, at his own expense, with many additional items outside the specifications. The results are really striking, and we plan to illustrate the vehicles as soon as possible. In the meantime, we give descriptions of the cars by a representative who inspected them shortly after they were placed in service. Our thanks go to the Commonwealth Railways who made this inspection possible.

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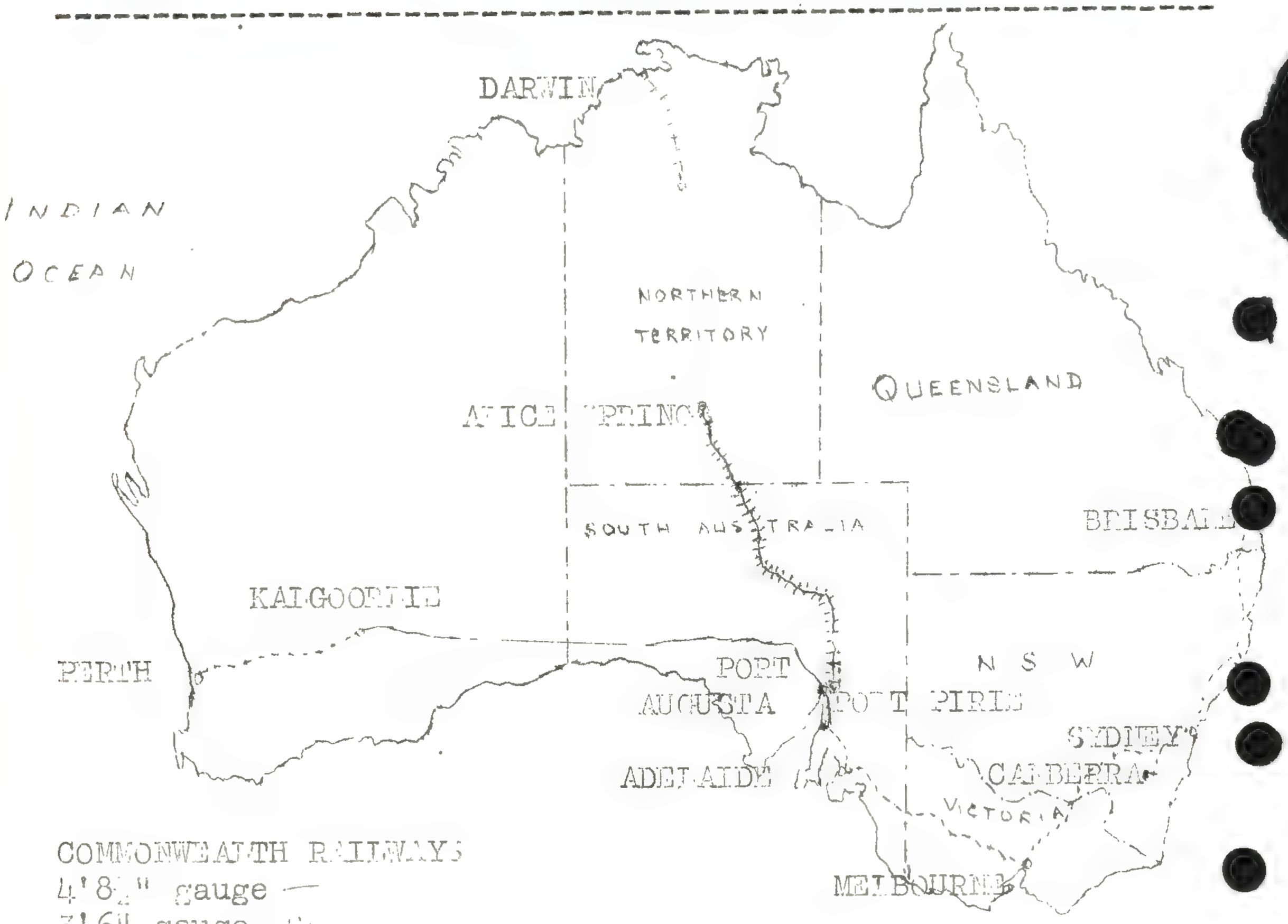

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(Continued on next page)

CONTRAILS LEADS (Continued from previous page) --

MAKEUP OF TRAIN

Each train comprises, from the head end:

HRGa (50 tons, approx.) - Power van, with guard's compartment and crew's quarters.
BRb (45t.7c.) - 2nd class sleeper
BRb (do)
BRF (46tons) - 2nd class sleeper and lounge
Dc (48t.19c.1q.) - Dining car
AFa (39t.3c.2q.) - 1st class lounge car
ARd (43t.12c.) - 1st class sleeper
ARd (do)
ARF (41t.16c.2q.) - 1st class sleeper and lounge

In addition, a van (not part of the new order) is attached:

Ma (26t.13c.2q.) - baggage.

Total weight, loaded, is approximately 450 tons.

DETAILS OF THE CARS

Each class of car is described separately; the numbers of the cars on the first and second trains, respectively are separated by an oblique stroke. Colour of all cars is Burgundy, with silver roof and waistband, and black skirt and trucks. The trucks are designed for speeds in excess of 100 m.p.h., and have roller bearings.

HRGa 096/097 - (a) Power van: diesel generating plant (2 x General Motors 6-71, 120 h.p., 1500 r.p.m. engines; full load 160 KVA, 415v, 3-phase, 50 cycles.
(b) Guard's compartment (in centre): cupola, with two elevated seats; compact desk; switchboard.
(c) Crew's quarters: 1 x 2-berth cabin; 2 x 4-berth cabins; shower compartment and toilet.

BRb 086/088 - 8 x 4-berth cabins; conductor's cabin; shower
087/089 compartment; ladies' and gentlemen's toilets. Each cabin is appointed in blue uplolstery. There are 6 shelves and 7 cupboards, and above the window is a baggage rack, together with a self-balancing mirror; an oval wash-basin is beneath the window. An interesting feature is the venetian blind fitted between the dual window glasses; it is operated by a projecting handle. Air conditioning inlets and exhausts plus a radio and lighting complete the inventory.

BRF 090/091 - 6 x 4-berth cabins; lounge (green upholstery).

Dc 094/095 - 48 seats (at 12 tables) - both seats and tables can be folded back to facilitate floor cleaning; kitchen, equipped throughout in stainless steel; refrigeration space (120 cu.ft.); crew's facilities.

COMRAILS LEADS (Continued from previous page) --

AFa 092/093 - Divided into three sections, all luxuriously appointed, with veneer inlaid murals of German landscapes:
(a)Smokers' section - leather upholstery; seats along both sides and bulkheads, also 5 individual lounge chairs.
(b) Music Room - all upholstery in Moquette. Piano and radio section has seats along bulkhead and with backs to aisle, plus 8 individual lounge chairs. A small "semi-compartment" (apparently for card-playing, etc.) has a large rectangular table and a small circular table, surrounded by seats, plus one lounge chair.
(c) Ladies' section - upholstered in Moquette with bulkheadand side seating, plus 6 lounge chairs.
The seating along bulkheads and car sides is of the settee type; attractive curtains and neat venetian blinds complete the picture.

ARd 080/082 - 081/083 - 9 x 2-berth compartments, plus the usual facilities as in 2nd class sleepers above. Upholstery is of green patternod Moquette. There are two spacious wardrobes with shoe shelves, coathangers, etc., and full-length mirrors; a wash-basin, with socket for electric razors, mirror and individual light. There are also a luggage rack,and a luggage shelf above the wardrobes, as well as air-conditioning fittings and a radio. Lighting is generous and can be varied for use when the cars are made up for sleeping or for sitting, as well as low-power lights for night use. Another feature is the provision of thermos flasks for hot or cold liquids. A novel call-system to attract the conductor's attention can be cancelled only by the conductor pressing a button at the door of the compartment. Lighting in the corridors can be varied to provide restful.

ARF 084/085 - 9 x 2-berth compartments, plus a small lounge in the extended and rounded end of the car. The usual facilities are provided at the forward end of the car. The lounge contains five individual lounge chairs, a circular table, and a small book-case.

(Continued on next page)

COMRAILS LEADS (Continued from previous page) --

Ma (See note) - These are M vans converted to Ma type by the addition of masonite exterior panels painted to match the colour scheme of the new cars. Ma 37 was in service, and M 35, 36, 38, and 69 were being used, pending conversion, as at January, 1953.

As crew members were in occupation of the HRGa car inspected by our representative, he did not examine the car in detail. It appeared, however, to lack anything in comfort by comparison with the 2nd calss passenger accomodation.

MISCELLANEOUS DETAILS

Wiring and air-conditioning equipment throughout the train is particularly accessible, being located above the corridor ceilings; the latter can be lowered by the turn of a handle. It may be added that air-conditioning is rather more than a luxury on trains operating across the Nullarbor Plains; temperatures as high as 127°F have been recorded in the dining car in past years! A most unusual feature of the trains is that no batteries whatever are provided in the electrical equipment.

Car bodies are constructed of skin-stressed, all-welded steel and are insulated by a formidable series of layers, first a cork-and-rubber mixture, then glass wool and timber, followed by cork and lead. Underfloor insulation is up to 9½ inches thick, while sides and roofs have as much as 3½ inches. Interior panelling is of Swedish birch in compartments and of mahogany in corridors.

Hot and cold water is supplied throughout the trains, both in sleeping compartments and shower rooms.

It may be mentioned at this stage that the comfort of the enginemen has not been overlooked. The GM class diesel locomotives which haul these trains are equipped with refrigerators, water coolers, electric kettles, etc.,

FAST SCHEDULES

The new schedules which came into force following the introduction of these trains allows 24hrs.15mins. for the 1108 miles journey. This includes 75 minutes for stops, giving running time of 23 hours, with an average speed of 48¼ m.p.h. This is one of the fastest schedules in Australia, despite the great length of the journey and the relativcly light track, and is almost 24 hours less than the previous timing with old rolling stock and steam power.

EARLY MISHAPS

The new trains have figured in two spectacular accidents which were, however, from purely external causes. In the first of these, a train drawing to a halt at the western terminus of the line (Kalgoorlie, W.A.) was struck in the rear by a switching loco and pushed through the buffers, the diesel locos being

COMRAILS LEADS (Concluded)

damaged severely. The second incident occurred in the desert when a blistering sun distorted rails and derailed a train at speed. Fortunately no great damage was done, and the air-conditioning system continued to work. The dining car tilted alarmingly and was propped up by a handy tree!

RECORD TRAIN

The inaugural trip of the new rolling stock was made with all cars made up as an 18-car train, total 880 tons - a record for passenger working in this country - hauled by GM class diesels Nos.1 and 2. The journey was made in just over 23 hours, with a maximum speed of 77 m.p.h., and the trip included a record non-stop run of 303 miles, between Cook and Rawlinna, at an average of 62 m.p.h.

SOME ODDITIES

One unusual feature of the trains is that coal is still required for their operation! This fuel is used in the kitchens, having been found preferable to others for cooking.

Another is that, although most cars adhere to the Australian standard loading gauge width of 9ft.8in., the dining and lounge cars are 10ft.3½in. wide. The Commonwealth Railways have no loading gauge problems and, presumably, it would not be necessary to run these cars through if standardisation became a reality. In this connection, the extreme length (85 ft.2in.) of the ARF, Dc, BRF, and HRGa cars may also make through-running a problem. Other cars are 78ft.2in.

OLD CARS TO BE MODERNIZED

To enable additional high-speed service to be provided when required, the original Comrails passenger stock, much of which dates from World War I, is to be fitted with high-speed trucks of the same pattern as the new cars, and otherwise modernized. When this work is complete, it will be possible to offer daily passenger service in each direction over the "Trans" line.

The present timetable is: (a) "TRANS" EXPRESS:
WESTBOUND: Dep. PORT PIRIE JUNC. 5.45 p.m., Mon.Wed.Fri.
EASTBOUND: Dep. KALGOORLIE 10.05 a.m., Sun.Wed.Fri.
(b) THROUGH MIXED:
Weekly in each direction - run mainly for railway purposes.
(c) THROUGH FREIGHT:
Twice weekly in each direction, with extras as required.
In addition, local service is provided at the eastern end of the line, Budd railcars being used in passenger service.

WANT TO BUY THE U.S. RAILROADS?

You probably could if you had 60 billion dollars! That is the amount which it is estimated it would cost to replace all Class I railroads (those with a revenue in excess of one million dollars annually). During the first half of 1952 these railroads spent nearly 4 million dollars a day on improvements. Who said railways are obsolete?

RAILWAY ROUND-UP
News from Australian Railway Systems
Contributions Invited

Victorian Railways

WHAT'S DOING AT NEWPORT SHOPS?

From time to time readers ask what work is being carried out at the Newport Workshops of the Victorian Railways. A representative of this journal was able to visit this extensive establishment recently, by courtesy of the V.R., and has reported his observations as follows:

LOCOMOTIVES

H class 4-8-4 No.220 - receiving complete overhaul.
S class 4-6-2 No.303 - (do)
X class 2-8-2 No.32 (the pulverised brown coal burner) and four standard X class locos - receiving overhauls.
R class 4-6-4 Nos.768, 769 (new) - being readied for service. 6 or 7 others of this class, including Nos.707 and 742, in for overhauls.
N class 2-8-2) - several of each in for overhaul or repairs.
K class 2-8-0)
D1 class 4-6-0) - one of each in for overhaul or repair.
D2 class 4-6-0)
A2 class 4-6-0 - several marked "Scrap". (Four apparently NEW tenders for oil-burning A2's standing outside - no numbers carried).
E class 2-4-2T (the only remaining member of this class not converted to 0-6-2T design
Na class 2-6-2T (narrow gauge) - No.7A - major overhaul; one other stripped down to frames.

Also visible was what appeared to be the bunker for another pulverised brown coal locomotive.

PASSENGER CARS

AS (1st class all-steel cars) - one new car nearing completion also 14AS damaged in the Dudley Street arson incident under repair.
AE (1st class 12-wheel mainline cars) - 21AE and 26AE set aside some years ago for conversion to buffet cars (no work apparent); two partly gutted and two completely burnt-out cars from the Dudley Street affair.
"Dodge" railcar - one NEW vehicle under construction.
Railcars - 61RM (ex-P.E.) being converted to diesel-electric; 44RM (the car imported from Brill Works, U.S.A.) being used as a spray-painting booth.

FREIGHT CARS

Four-wheeled L (Sheep) and M (Cattle) cars under construction all with side buffers.
NQ (narrow gauge gondola) underframe being rebuilt.

MIXED BAG ON THE "OVERLAND" Reference has been made in these columns to the somewhat mixed appearance of the "Overland" Express between Melbourne, Vic., and Adelaide, S.A. consequent upon delay in completion of the construction programme for new cars - a delay forced by recent finance cuts of unprecedented severity. A recent and typical consist of this train was as follows:

Diesel Locomotives B62 and B60 ("Harold W. Clapp"), Bulk Mail car 4D, old sleepers "Inman" and "Barwon", Twinette cars "Dorai" and "Mokai", Roomette cars "Allambi" and "Chalaki", 1st class car 1AJ, 2nd class cars 2BJ and 3BJ, (?)ABE (1st/2nd class car, CE van.

MILDURA FREIGHT SPEEDED: As from 16th March, B class diesels will be used in freight as well as passenger service between Melbourne and Mildura, Vic. Running and standing times will be clipped by 17 hours on the Down journey and by 10 hours on the Up. Part of the 24-hour goods service now being advertised by the Victorian Railways, the new times will enable livestock for Tuesday's Newmarket sales to be loaded on Monday mornings. Principal freight from Mildura at present is the dried fruit crop for export.

BRANCH LINES MAY CLOSE (But Road Haulage May Be Tightened Up):

It has been proposed by the Victorian Minister for Transport (Mr Coleman) that country branch lines of the Victorian Railways on which once-a-week freight service, or less, is given should be closed. Traffic would be handed to road hauliers.

Many of the latter have been hit severely by the recent enforcement of road transport regulations designed to protect the railways from indiscriminate competition. These restrictions had been eased during the difficult post-war period but, as the railways now claim to be able to handle all traffic offering, a firmer hand was considered necessary. Hardest hit are small concerns - often one-man operated - which sprang up everywhere, often without thought for the future.

ELECTRIFICATION PROCEEDS DESPITE CUTS: Electrification of the Gippsland line - the first mainline electrification on the V.R. is proceeding. Test trains have run as far as Narrewarren to which point it is proposed to extend certain suburban runs now terminating at Dandenong. In the first test, 3CM, an electric parcels coach fitted with a special observation cupola, was towed by the Yard Pilot from Dandenong; a week later, 3CM ran under power over the same line; the third test involved a 3-car train of extraordinary appearance: 3CM led, followed by 201BT (the experimental suburban trailer), and 158AM,(swing-door motor). Later still, L1150, the first of the 25 mainline electric locomotives

now on order from English Electric, ran trials over the section.

No.1150 had previously carried out road tests, first on the Flemington Racecourse branch and subsequently with a heavy freight train on the Broadmeadows line. This is reported to have been quite successful, except that the Standing Start test on the Glenroy Bank is said to have opened all the substation circuit-breakers!

Six of these new 2400 h.p. "sparks" have been landed at the time of writing, of which two are ready for the road. It is planned to use some at least in suburban freight service and, possibly, for haulage of certain country passenger trains in the suburban area, pending completion of the Gippsland work.

Of the latter, in addition to the Dandenong-Narrewarren section, a considerable length of newly duplicated track beyond Longwarry has been wired.

Queensland Railways

NEW DIESELS IN SERVICE: Six new diesel-electric mainline locomotives, Nos.1210-1215, have been placed in service. The general appearance of these locos is described as resembling the N.S.W.R. 40-class Alco-G.E.'s. Intended for hauling the new luxury air-conditioned trains now being placed in service, the new diesels are being used meanwhile on wheat haulage from the Darling Downs to the coast. The complete order will total ten engines, to be followed by a further twelve with lighter axle loads; the second batch will be built in Australia to American designs. Track gauge of the Queensland Railways is 3ft.6in.

Details of the heavier locomotives are:

Weight in working order - 88 tons
Axle load - 14½ tons
Length over couplers - 56ft.0in.
Height overall - 12ft.7in.
Width overall - 9ft.0in.
Truck centres - 32ft.0in.
Total wheelbase - 45ft.0in.
Wheel diameter - 36in.
Coupler height - 31½in.
Tractive effort (30% adhesion) - 59,200lb.
Tractive effort (at continuous rating of motor) - 31,000lb.
Minimum radius curve - 5 chains
Maximum permissable speed - 50 m.p.h.
Traction motors - 6 x GE756

South Australian Railways

NEW CAR WASHING PLANT: Speedier and more efficient cleaning of passenger car exteriors has been made possible by the new "washing machine" installed by the S.A.R. in

the Adelaide yard. Six brushes are used, each 9ft. high by 18in. diameter; two apply a detergent solution, while the other four are used for rinsing. The brushes are controlled pneumatically, and the machine is operated by one man.

FLAW-DETECTOR: An electronic flaw-detector has been introduced by the S.A.R. Mounted on a self-propelled trolley, it can be used to detect flaws in rails, the result being shown on a cathode ray oscilloscope; 50 miles of track can be tested in one week.

A similar device is used to test axles without any need to remove the wheels.

New South Wales Railways

SUNDAY "FLYER" SERVICE TO NEWCASTLE: The popular "Newcastle Flyer" services between that city and the New South Wales capital have always been restricted to weekday operation since their inauguration in 1929. Following repeated requests, however, the N.S.W.R. introduced three trial Sunday services during November last. Bookings were heavy from the beginning, and the service was extended to operate throughout the summer. Known officially as the Newcastle Express, the train leaves Newcastle on Sundays at 7.18 a.m., the return journey from Sydney being made at 5.05 p.m. The inclusion of stops not made during the week has slowed the Sunday times to 2hr.46min. in each direction.

SEAT BOOKING PROBLEMS: Considerable embarrassment has been caused by the failure of persons who have booked seats on weekday "Flyers" to notify cancellations. (Although seats must be booked to travel by these trains, the fee is small, and the rail ticket is available for any train). Trains have been running with as many as 50 seats empty, while intending passengers have had to be turned away. It is proposed that a combined travel and seat-booking ticket be used.

WESTERN ELECTRIFICATION PROCEEDS: After having been suspended for some months, as a result of the recent cuts in government finances, the electrification of the main Western line of the N.S.W.R. between Parramatta and Wallerawang has been resumed. It is said that payments of compensation to the contracting company would have been so heavy that it was better to continue the work, using funds diverted from other projects. Completion will be delayed considerably, however, and the line is not expected to be fully in use until 1957.

RECORD PROFIT, BUT STILL A DEFICIT! During the year ended 30th June last, the New South Wales Railways made a profit of £4,889,527 on working,

but interest payments converted this into a deficit of £2,452-087. At £68,909,720, revenue reached an all-time record, and was £19,461,982 above that for the previous year, while working expenses, at £64,020,195, were £14,852,715 higher. Other figures are:

Passenger journeys - 268,167,596 (399,487 fewer than 1950-1)
Freight traffic - 18,527,732 tons(1,396,428 tons increase).
Cost of coal purchased - £9,228,703.
Capital expenditure on lines open for traffic - £217,621,764

RELIGIOUS PILGRIMAGE MAKES UNUSUAL TRAIN JOURNEY: Two special trains from Maitland will convey pilgrims to Sydney for the National Catholic Eucharistic Congress in April. The 15 Decades of the Rosary will be recited in each carriage.

RAIL TOURING POPULAR: One-day scenic tours, introduced by the N.S.W.R this year have proved very popular. Two trains ran from Sydney on 8th February for Moss Vale, Robertson, and return via the South Coast, with nearly 1000 people. Two weeks later the outing comprised a return train trip to Katoomba, with a motor tour of the Blue Mountains

OLD LOCO STILL SERVES: For a recent tour organised by the Australian Railway Historical Society, a venerable 12-class 4-4-0, No.1231, was used, together with two large, open-platform American cars. Originally built in 1880, No.1231 is one of the oldest engines in regular service in this country. The class was reprieved from scrapping because of a need for light engines for fast branchline service. The tour, for which the train crew and several members of the party wore period costume, was a great success; the popular circular route from Sydney, out via Moss Vale and return via the South Coast, was followed

GAUGE CONVERSION ESSENTIAL: Criticizing the "lamentable lack of foresight" in the failure to tackle the gauge unification problem, the South Australian Railways Commissioner (Mr R.H. Chapman) explained the reason for his department's desire to convert existing narrow gauge S.A.R. lines to 5ft.3in. This would enable inter-running, with considerable economies, with the rest of the S.A.R. The work would be so arranged that future conversion to standard gauge would cost a negligible proportion - about 3% of the total, and this would be done when Victoria was ready to convert her lines (Victorian Railways use the 5ft.3in. gauge and have extensive through-running with the S.A.R.). Conversion of the S.A.R. narrow-gauge North-eastern Division to 5ft.3in. would save transhipment of over 170,000 tons of freight annually at Terowie Mr Chapman was commenting on an appeal by the Commonwealth Rail-

R A I L W A Y S IN A U S T R A L I A

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Managing Editor: J. Richardson

A WORD FROM YOUR EDITOR

Good news! Just before typing this page, I learnt that some, at least, of the problems which have been holding up the magazine have been overcome, and the printed issue which has been in the making for some weeks will be completed at long last - some of you should, in fact, receive it along with this issue.

I should like to be able to promise that there will be no further delays, but this is entirely a matter of finance, and that rests in the hands of you, the readers. Renew subscriptions promptly as they fall due - encourage others to subscribe, and all will be well. If not, the only alternative will be more issues like this.

(Continued from previous page)

ways Commissioner (Mr P.A. Hannaberry) who urged strongly that the narrow gauge lines between Broken Hill, N.S.W., and Port Piric, S.A., should be converted to standard gauge as soon as possible. This would provide unbroken standard gauge connection between Brisbane, Q., and Kalgoorlie, W.A.

FAST FREIGHT AND CONTAINERS ATTRACT CUSTOMERS: The recent introduction of fast freight services between Sydney and Melbourne enables less-than-4 -hours delivery to be made between the two capital cities. This service is further facilitated by the use of freight containers of 5½ tons capacity, removing the delays and risk of damage at the break-of-gauge points. Considerable numbers of the containers are in use, but the demand still far outstrips the supply. A further feature of the containers is that they can be transferred to road vehicles and delivered to the door of consignees who have no railway siding.

Some criticism has been levelled at the Victorian Railways in that, whereas the N.S.W.R. carry the freight over two thirds of the distance at speeds ranging up to 75 m.p.h. in steel box cars (flats for the containers), the V.R. provide only 4-wheel open vehicles with 40 m.p.h. limits.

100 TONS OF WOMEN! What is believed to be Australia's record passenger train recently conveyed 1,104 women bowlers from Adelaide to Victor Harbour and back. Seventeen cars including a cafeteria car were used

HISTORICAL BACKGROUND by Trevor J. Hosking

Most model rails have cooked up some sort of historic background for their railroad, and you can do it, too!

Remarkably enough, you don't have to excel in history... but, let me tell you of an imaginary railroad of which I am general manager and which, incidentally, provides the basis for my own model railroad project.

The system is supposed to have a main line 19½ miles in length, from EDNAVILLE to STERLING. There is a long branch to MAYLAND, and a circular branch known as No.1 Loop. At EDNAVILLE a connection is made to NORRIM SOUTH (on the Victorian Railways' Noojee line in Central North Gippsland). The area is supposed to support a fairly large population, thus giving me the right to run an express each way daily to the V.R., also many local goods and passenger trains. An extract from the historical records is given below:

"In 1913, after a rich gold find had been reported in the Sterling Valley, nearly a quarter of a million fortune hunters thronged to the valley by wagon, on horseback, and on foot ..... A group of rich men (former miners), led by a certain Mr Higginboost, decided that a more efficient form of transport would have to be provided. As a result, the railway from the V.R. railhead at Norrim South to Ednaville (5 miles) was completed by April, 1914. The connection to the Sterling Valley was completed by April, 1915, but, owing to the Great War, and the petering-out of the gold findings, many thousands of miners left the district (this time by rail). A population of 7000 remained to settle in the district, and so the line was not pulled up. After the war, in June, 1920, when materials became sufficiently plentiful to permit the construction of extensions, local labour completed No.1 Loop which is 10¼ miles long. After its completion, a start was made on the branch to MAYLAND, 18 miles from EDNAVILLE, and this was finished by November, 1925."

The first locomotive used on the line was an 0-4-0 saddle tank "Jean" which was followed by two 2-6-2 tanks (later classed 'W'). These locomotives were sold in 1930, after more powerful engines had been built.

The foregoing will give an idea of what can be done, and readers who already have a history for their model system will agree that a model railway which is just a toy train or a railway with no background is not enjoying the full benefit of his hobby.

9/52

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Railways in Australia

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March-April, 1953
Price: 1/3

The Magazine About Australian Trains

About this magazine

All Our Own Work!

Readers will be interested to learn that we have now acquired our own printing press, through the very valuable assistance of a subscriber to this journal. The economies which accompany this new arrangement should enable us to publish "Railways in Australia" more or less regularly in future.

There are, of course, several difficulties to be overcome, not the least of which is, of course, the greatly increased demands on your editor's time by the necessity to be printer as well. Correspondents are asked to be tolerant of delays in replying to letters and to accept, where relevant, acknowledgment in these columns in many cases. Where no actual reply is required, we shall simply send cash receipts, etc., with the next issue despatched.

Valuable Help

The new step would not have been possible without the assistance of Lloyd Holmes, as News Editor, and David Gross, as Model Editor. These gentlemen will be taking a great load off your editor's back and we ask readers to help them in turn by sending in news items and other contributions. Addresses will be found elsewhere in this issue.

Subscribe Now

Finally, if you do not already have a subscription, you can help greatly by taking one out now. Each new subscription establishes your magazine more firmly. Remember, nobody makes any money out of this journal — it is published by enthusiasts for fellow enthusiasts.

Emergency — Don't Miss It

To keep faith with our subscribers, during the long period when this magazine was not published, we prepared an "Emergency Issue", printed by the stencil process. Although stocked by certain of our retailers, the issue was not generally on sale to the public. If you did not obtain a copy, you can do so now — it is well worth the trouble.

Included is a detailed description of the new trains operated by the Commonwealth Railways, as well as many items of news and other features.

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THE ACTUAL PUBLICATION DATE OF THIS ISSUE IS JULY, 1953. IT IS, HOWEVER, DATED AS SHOWN TO PRESERVE CONTINUITY. SUBSCRIPTIONS WILL BE EXTENDED, IF CURRENT. (SEE NOTE BELOW.)

OUR COVER PICTURE

This month's cover uses an attractive photo by K. Rogers of No. 861 of the Queensland Railways (3 ft. 6 in. gauge), a C17 class 4-8-0 on a suburban passenger train from Brisbane to Pinkenba.

Any Magazine Is New Until You've Read it

Despite the irritating delays and difficulties which have beset this magazine over the past two years, new readers continue to send along their subscriptions. If you are one, we thank you, and hope that you will find the magazine worth waiting for.

There have been many issues previous to this and limited stocks of most of them are held. They are all interesting and some contain particularly attractive illustrations and should not be missed.

Any one copy may be had, or you can order the lot — they will be sent by return mail. The price is 1/- per copy, including postage, and Australian readers may send the appropriate number of 3d. postage stamps to pay for small orders. The sterling price is 1/- per copy, while readers in dollar countries pay 20 cents, with a special rate of 2 dollars for 12 issues.

Issues currently in stock are:—

1948: August to December.
1949: January to September; December.
1950: April to December.
1951: January; April to August.
1952: January to September.
1953: January/February.

It should be noted that several issues have been combined and some months were omitted altogether, so that the available issues for 1950 total 6, those for 1951, 4; for 1952, 8.

Some stocks are very low, so order right away or you may miss out.

WHOSE PICTURE?

It is regretted that last month's cover picture was incorrectly attributed to the camera of Mr. J. Stormont. If the correct owner of this striking view would be good enough to let the editor have his name suitable acknowledgment will be made in these columns. The original caption had become separated from the print and we had to rely on a memory which apparently leaves something to be desired.

STEAM FANS' NIGHTMARE COMES TRUE!

History was made on Wednesday, 10th June, when B class diesel electric loco No. 68 hauled the Victorian Railways' crack express "Spirit of Progress" from Albury to Melbourne. The load was 11 cars, total 565 tons. The train left Albury 24 minutes late and had lost a further five minutes passing Seymour (129 miles); in the remaining 61½ miles to Melbourne five minutes were regained.

Early publicity for the diesels showed an artist's impression of one on the "Spirit" but the train had remained stem-hauled until the journey described above.

(Photo by Lloyd Holmes shows the train passing through Seymour

Railway Round-up

News from Australian Railways

Edited by Lloyd Holmes
Contributions Invited

VICTORIAN RAILWAYS

IMPROVED SCHEDULES
Diesels on North-Eastern Line

Several important changes took place recently in the schedules of freight and passenger trains on the North-Eastern line.

No. 71 Passenger, "Albury Express" (4.15 p.m., ex-Melbourne) is now regularly diesel-hauled, arriving at Albury at 9.40 p.m., instead of 9.45 p.m., as formerly. The loco then picks up No. 126 Freight (10.30 p.m., ex-Albury), hauling 1,000 tons to Seymour, 750 tons thence to Melbourne, where the train is due at 5.50 a.m.

No. 103 Fast Freight (7.30 p.m., ex-Melbourne) is also diesel-hauled, arriving at Albury at 4.30 a.m. Stops are made at Seymour, Euroa, Benalla, Wangaratta, Springhurst and Wodonga, to detach perishable loading, change crews, etc. The diesel returns with No. 38 Passenger (8.09 a.m., ex-Albury), the south-bound "Albury Express", which now arrives at Spencer Street 40 minutes earlier, at 1 p.m.

No. 73 Passenger (north-bound "Albury Express" on Sundays) now departs from Spencer Street at 9 p.m., 20 minutes later than formerly, arriving at Albury at 9.45 p.m. as usual.

DIESEL PULLS 2,222-TON WHEAT TRAIN

Recently, two B-class diesel-electric locomotives made a new V.R. record by hauling a 2,222-ton wheat train from Warrenheip to Geelong. There were 74 cars and a van, and the train was nearly 2,000 feet long.

The Railway Department's fleet of diesel-electric locomotives (which now numbers 16) continues to set new standards, B.72 being the latest to enter the record-breaking class. Last month, this locomotive established a new load performance between Benalla and Albury, by hauling 1,016 tons, the heaviest tonnage ever hauled by a single locomotive over this section of the north-eastern line.

Four of the locomotives are used to haul "The Overland" and daily interstate fast goods trains between Melbourne and Serviceton, one hauls a regular passenger train to and from Bairnsdale each day, and goods trains to and from Geelong each night, and others are used for passenger and goods services to Mildura, Bendigo and Albury.

The big mileages registered by the diesels underline their high rate of availability and dependability. For example, B.60, "Harold W. Clapp", the first of the fleet, celebrated its first birthday this month by completing 166,833 miles. B.63 is also piling up mileage. It went into running in October last and, by the time it has completed 12 months' running, its mileage will be about 180,000. Last month the combined figure for all diesels passed one million miles.

The progressive delivery of these locomotives is enabling the Department to continue its policy of improving country passenger and goods service.

V.R. Posters in Korea

Some of the attractive tourist posters that have brightened Victorian railway stations have been used to good effect in the air-crew and ground-crew clubs of No. 77 R.A.A.F. Squadron in Korea. The squadron, which has distinguished itself on numerous occasions and has earned decorations for several of its members, operates from the large United Nations' base at Kimpo.

LIVE STOCK HANDLING
V.R. Deny Cruelty

Categorically denying allegations, reported in a Melbourne newspaper, that railway regulations for the handling of live-stock are inadequate and that cruelty occurs, the Railways Commissioners said that great care is taken by all railwaymen engaged in the handling of live-stock to ensure that the animals are well looked after during transit and that they arrive at destinations in good condition.

Special instructions to the staff cover all phases of live-stock handling. For example, if there is an unavoidable wait of more than six hours for a connecting train, stock is discharged, fed and watered. During transit, stock trucks, are examined frequently by train crews and station staffs to make sure that animals have not fallen and have not been trampled upon. In cases where stock is found to be in bad condition, trucks are detached and the animals spelled.

Dedication to Service

The very spirit of Red Cross is dedication to service . . . but the spirit needs the backing of the people to keep it alive in its practical application. The blood banks, the emergency relief services for disaster victims, sanatoria to fight tuberculosis, the hundreds of tasks that are helping disabled service men and women, the long, patient nursing of tiny cripples, the aged and infirm . . . We can all help Red Cross to maintain the grand services that mean so much to those who have been hit hard by fate.

This is Red Cross Month

—GIVE LIBERALLY—

The Commissioners emphasized that all reasonable precautions are taken to ensure that trucks are not overloaded. Special attention is paid to the transport of calves, and no calf in excess of 36 inches in height is permitted to be loaded into a sheep truck.

Sunday Trains Again

The restoration of Sunday excursion trains to and from the country has more than justified itself in the expressed view of the Railways Department. Despite the onset of winter, patronage of most of the trains, both to and from the country has been gratifying. Members of hiking clubs, of which there are about 20 in Melbourne alone, are again among the patrons, particularly of the trains to the hill country. The Railways Department, through the Tourist Bureau, has linked up with the Federation of Walking Clubs to promote this traffic. When spring arrives it is proposed to expand the scope of the Sunday trains to cover some of the blossom country.

N's Reboilered

At least six of the original N class 2-8-2's of the Victorian Railways have now been reboilered with boilers of the type fitted to the post-war N's of improved design. Latest to appear from Newport Workshops is No. 417. No other alterations are visible, so that the reboilered locomotives remain distinctly different from the modern version, which has larger chimney and half-sized smoke deflectors.

N.S.W. RAILWAYS

WESTERN ELECTRIFICATION

Progress Visible At Last

Progress continues to be made on the electrification of the Western Line, following resumption of this work on a reduced scale — it had been suspended when inadequate funds caused a cessation of many large-scale projects throughout Australia last year.

At the present time, nearly all overhead structures, or bases for such structures, are in place between Westmead and Kingswood (near Penrith, the terminus of steam suburban services). Steelwork for the fly-over junctions between Seven Hills and Blacktown is at the site, and a temporary level crossing at the eastern end of Blacktown yard has replaced the old crossing at the western end, to enable work to commence on the new yard and station. Culverts and earthworks for the Blacktown-Doonside quadruplication are under way. Concrete foundations are to be seen at Blacktown, Emu Plains, and at a site on the Blue Mountains, while the sub-station at Valley Heights, complete with transformers, has been erected.

S.A. RAILWAYS

Automatic Crossings

It was stated in our issue for August last that the first of 20 sets of automatic level crossing gates for the S.A.R. were installed at Croydon, followed by a set at Alberton.

A South Australian reader advises that this is not quite correct, a set having been installed at Ovingham, on the Main North line, and this was in use as from Monday, August 21, 1950. The Croydon set followed in April, 1952, and the Alberton gates were placed in service early this year.

750 Class in Yard Work

Ex-V.R. 2-8-2, No. 750 replaced No. 754 at Port Adelaide some weeks ago, and has been seen handling coal traffic regularly at the Harbour Board gantries and the Electricity Trust power station at Osborne.

Diesel Order Completed

Nine of the ten 900-class 1,760 h.p. diesel-electric locomotives are in service, the tenth being due before these lines appear in print.

Diesels for Harbour Area

Tenders are being called for ten 700 h.p. diesel-electrics for shunting and transfer work in the Port Adelaide - Outer Harbour - Osborne area.

Narrow Gauge Garratts

The first two or three of the European-built, narrow-gauge Garratts for the Northern Division (3 ft. 6 in gauge) have arrived at Port Pirie.

Broad Gauge to Mt. Gambier

The widening of the 3 ft. 6 in. gauge line from Wolseley to Mount Gambier has been completed. (Details next issue.)

COMMONWEALTH RAILWAYS

NEW STANDARD GAUGE LINE

It has been announced that the new 4 ft. 8½ in. gauge line being constructed by the Commonwealth Railways from Stirling North to Leigh Creek will be completed by June, 1954. The new power station at Port Augusta for which coal will be hauled over the new line, will be ready by that date.

Our New Editor's address is:

Mr. Lloyd Holmes,
Batten Street,
Seymour, Vic.

News items should reach him by the 20th of each month.

SHORT ORDER

For a number of reasons it has been necessary to restrict the amount of news in this issue. To make up, there will be more than the usual quota in our next issue.

PERSONAL

"Sing." Retires

The retirement has been announced of Mr. C. C. Singleton from the engineering staff of the New South Wales Railways, and from the General Presidency of the Australian Railway Historical Society. "Sing.", who is known to many of our readers for his absorbing interest in railway matters, and for his genial personality, will be missed greatly from both of these activities. One of the foundation members of the A.R.H.S., he has held the presidential position for twenty years. To mark the esteem in which he was held, members unanimously elected him to Life Membership. We understand that, following a well-deserved holiday, Mr. Singleton will devote his attention to many matters for which he has not had the time in past years, not the least being the construction of a model railway. He will also continue active association with the A.R.H.S. as a Vice-President, and as a contributor to the Society's bulletin.

ANSWERS TO CORRESPONDENTS

K. SWAN, Mt. Colah, N.S.W.—Change noted.

DAVID O. JONES, Glenview, U.S.A.—You will have had my letter by now. I get U.S. mail up to three months after posting at times.

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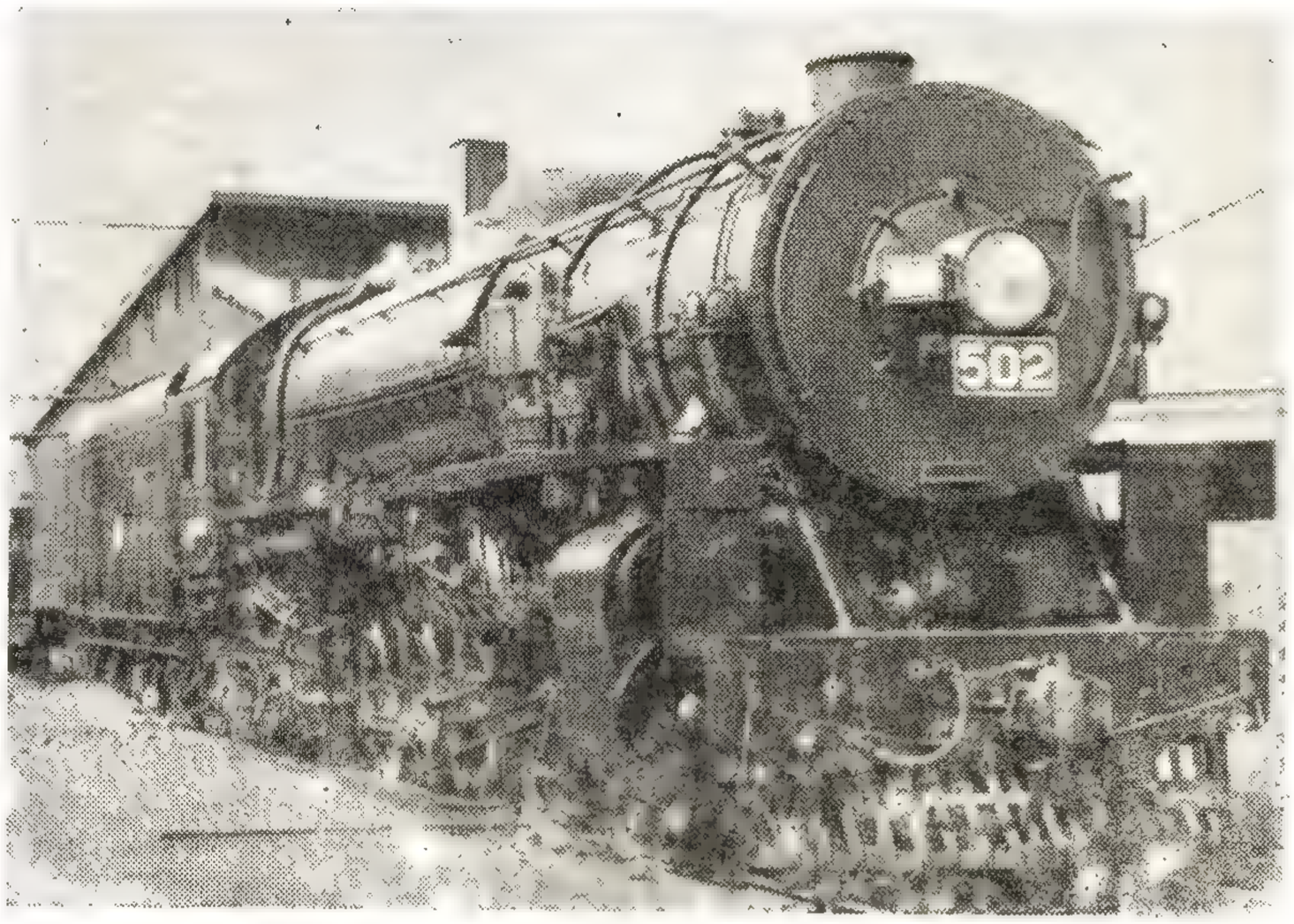
BIG POWER is No. 502, a 500-class 4-8-4 of the 5 ft. 3 in. gauge lines of the South Australian Railways. These impressive machines, which were originally 4-8-2's, were built by Armstrong-Whitworth Ltd., of England, as part of the great rehabilitation scheme introduced by Commissioner Webb in 1926. They were then the largest and most powerful locomotives in Australia, and still have few contenders for this position. Total weight is tons, boiler pressure lb., tractive effort 5 lb. Our illustration was prepared from an enlargement by Laubman & Pank of a photograph by a South Australian reader.



Home via the "South East Ltd."

By Lloyd Holmes

Having travelled to Adelaide via the orthodox route, in the superb "Overland" express, the thought came to return to Melbourne by another route—one which would allow us to see a considerable amount of South Australia and Victoria by daylight.

So we travelled via Mount Gambier.

On the morning of our departure from Adelaide's fine station, the "South East Limited" comprised a 12-wheeled, long brake van, two 800-class steel cars, and a wooden, clerestory-roofed car of American design, with open-end platforms.

No. 701 was the motive power assigned to the train; these versatile Mikados have proved themselves one of the S.A.R.'s most versatile classes since their introduction in 1926. At 8.15 a.m., 701's 57-inch drivers commenced their first revolutions towards Tailem Bend, some 74 difficult miles distant.

Passing through the busy Adelaide Yard we saw many F-class 4-6-2 suburban tanks which run Adelaide's suburban trains. Mile End Freight Yard could be seen on the right, and there was plenty of activity — freight cars being loaded and discharged, country freight trains being marshalled, and all the accompanying movements to be seen in a busy yard. The Mile End Loco Depot is at the back of the Freight Yard, and all that can be seen of it is the coal tower and a glimpse of the roundhouse, together with the usual pall of smoke associated with an engine depot.

By this time, 701 was pushing back the miles at the rate of about 45 to the hour. As we sped through Goodwood, the two tracks which had accompanied us in the right veered away, heading towards Marino and Willunga. Through pleasant suburban areas we passed, and the climb to Mount Lofty had evidently begun; speed slackened, and the sharp bark of 701 drifted back to us.

The country is particularly rugged near Sleeps Hill. One moment the line is on a high embankment, next in a deep cutting and, with tunnels, 10-chain curves, and 1 in 45 gradients thrown in for good measure, this is a profile of the South Line almost to Murray Bridge.

At Belair (13¼ miles) we left the double track behind and entered what must be one of the busiest stretches of single track in Australia. Heading into the siding at Long Gully, there was a short spell of silence broken only by the impatient panting of 701's air pump. Then the grumble of diesel motors was heard, and the west-bound "Overland", a little behind schedule, rolled by on the main line.

The next section, to Mount Lofty, was ours, and 701 settled down to a steady, hardworking fifteen miles per hour, the deep, measured beat of the exhaust telling of her effort. Shortly after 9 a.m. we topped the summit at Mount Lofty, 1,613 feet above sea level and 19½ miles from Adelaide. No. 528, a handsome Northern type, was in the "Up" platform with the early passenger train from Tailem Bend.

At Aldgate, where light Pacific No. 628 was in the clear with a local from Bridgewater, 701 made a neat stop under the crane to take a well-earned drink.

Through Bridgewater, Yantaringa, Ambleside, and Balhannah we passed and, at the last-named, an east-bound freight was in the siding, headed by a massive 720-class 2-8-4, No. 736.

Mount Barker, junction for the line to Victor Harbour, is 31 miles from Adelaide, and half-way to Murray Bridge. Nairne boasts a very attractive station garden and, with a pleasant green creeper covering the station buildings, presents a welcome change to the drab sameness of many railway stations. Down through the valley town of Callington we noticed that the character of the country had changed, the steep, wooded hills of the Mount Lofty Ranges having been replaced by undulating grazing country. As we rolled

BABY, IT'S COLD OUTSIDE!

Our friend in the overcoat (opposite page) would like to be on the other side of the window. The publicity boys of the N.S.W. Railways say it's because of the delightful conditions brought about by the air-conditioning in modern N.S.W.R. cars, but it's just possible that the young ladies are an attraction too!

(Official N.S.W.R. Photograph).

through the station on an easy right-hand curve, the line ahead could be seen like a long scar across the hill as it climbed out of the valley on a two-mile grade. Murray Bridge (60 miles) was reached at 10.45 a.m., the refreshment rooms proving quite popular.

Leaving this large town, the line curved to the left, passed through a short tunnel under the highway, and emerged on to the bridge which spans our mightiest river — the Murray. The latter is about a quarter of a mile wide at this point. The original rail bridge, now used by road traffic, can be seen a short distance upstream.

Rabila and Monteith were ignored, 701 making the most of the flat terrain, and Tailem Bend was reached 20 minutes after leaving Murray Bridge. At this busy depot, 701 was uncoupled, and No. 525, a streamlined 4-8-4 of striking appearance, knuckled with our train. Diesel 901, having brought in the early passenger train from Adelaide, was standing in readiness to commence the return trip when we vacated the platform.

Leaving the curiously-named "Bend" from which a number of lines run north into the Murray Lands, the country took a turn for the worse, being flat and barren, with occasional clumps of stunted scrub. At Cookes Plains we passed a long east-bound freight headed by a big 600-class Pacific, No. 609.

The 5 ft. 6 in. drivers of No. 525 kept us at a steady 55-60 m.p.h., this being the speed limit on S.A.R. lines. Stops were made at the wayside towns of Coomandook, Yumali, Ki-Ki, Coonalpyn and Culburra, as good a batch of real Aussie names as you could find anywhere! At Tintinara, No. 604, another fat-boilered Pacific was on the other side of the platform, with a long interstate freight bound for Adelaide, the dull red of V.R. cars being prominent in the consist.

Pulling into Wirrega where, from the right-hand side of the train we had a good view of the staff exchanger in action, No. 531, a sister to our engine, was in the hole with the west-bound counterpart of our train.

Apparently South Australia has trouble with the quality of its water, for 525 was blowing down continuously while running and, on a previous trip to Port Pirie, the same was noticed with a "600".

Bordertown, actually about ten miles from the Victorian border, is a water stop, besides being a town of no mean size. No. 525 was very thirsty, as the driver, after pulling down the spout on the American-style water crane (standard on the S.A.R.), fixed it in that position somehow, climbed down, and proceeded to oil the rods and motion. The fireman, incidentally, was occupied with his fire, and in cleaning the ashes from the pan.

Wolseley, only a stone's throw from the border, was reached in the mid-afternoon. To the right of the island platform could be seen the transfer sheds for the exchange of freight from broad to narrow gauge cars, and vice versa (there is mixed gauge south from this point).

The line to Mount Gambier leaves the Main at Wolseley and curves to the right, running so close to the border that the Serviceton wheat silos could be seen in the distance. Watching to the left as we bade farewell to the main line, we saw the Accident Train from Tailem Bend. According to a fellow passenger, it had come to put a cantankerous diesel back on the rails. This train is red instead of the usual S.A.R. light grey, and consists of a Webb-era American caboose, two boxcars, a 107-ton crane, all headed by Engine No. 600.

Over new track, with a third rail beneath us for narrow gauge traffic, No. 525 pointed her streamlined nose due south through pleasant grass country, which was easy on the eyes after the monotonous desert country.

At Frances we passed our fourth 600-class Pacific when No. 605, with a freight from Naracoorte, had possession of the loop. A few 3 ft. 6 in. gauge cars, probably bound for the Port Lincoln Division, were seen riding flatcars on this train.

Brief stops were made at Binnum, Kybybolite, and Penola, and at 4.40 p.m. we rolled around a wide curve into the picturesque town of Naracoorte, terminus for passenger trains until Mount Gambier is

S.A.R. "F" Class 2-6-4 T on a suburban train.

(Photo by Mal Park)

reached by the 5 ft. 3 in. gauge track extending slowly southward. From here we travelled in that unmentionable contrivance, a bus! Travelling a mile or two in one when necessary is one thing; 64 miles to Mount Gambier was not anticipated with any degree of relish.

When the van of our train was unloaded, an ex-class 4-6-0, No. 201, placed it at the other end of the train, and the Up "South East Limited" was marshalled ready for the return journey next morning. Standing alone and forlorn, some thirty feet from the nearest track, at the northern end of the yard, was an old water tank and spout. Apparently it once served narrow-gauge trains, but has since been disused.

Almost last into the bus, we earned seats right over the rear wheels, so know just how many bumps there are to Mount Gambier. With envy we watched the departure of a 3 ft. 6 in. gauge railcar and caboose on the Kingston branch. Mount Gambier's welcome lights came into view 2½ hours after leaving Naracoorte.

The following day was spent in looking around the busy "capital" of the south-east of South Australia, including the magnificent lakes which provide Mount Gambier's main tourist attraction. At the station, which was being refurbished in preparation for the arrival of the broad gauge, a number of narrow gauge passenger cars could be seen in derelict condition. Three narrow gauge T-class 4-8-0's were in the engine shed and, while looking them over, a V.R. broad-gauge light headed in from the east, hauled by a K-class Consolidation, No. 148.

As she whistled for the road crossing, the difference in tone between S.A.R. and V.R. whistles was noticeable. S.A. engines have a deeper and, I think, more mellow chime than their V.R. counterparts.

Leaving Mount Gambier, we had to take another bus ride to Hamilton, Victoria, some 84 miles, as the V.R. does not see fit to operate passenger trains to Mount Gambier. Midday found us at Hamilton, where a 153 h.p. diesel railcar was waiting to run us to Ararat.

The first part of the trip was uneventful, apart from crossing another railcar and a freight, the latter headed by light 4-6-0 No. 608, class D3, at Glen Thompson, costing us 20 minutes. Some excellent views of the southern end of the rugged Grampian Mountains are to be had from this line. Ararat (131 miles) one of Victoria's busiest rail centres, was reached in the late afternoon. Here we detrained and put a brief wait to good use in sampling V.R. coffee.

R-class Hudson, No. 762 rolled in from the west with the Melbourne-bound passenger train, presenting an unusual sight after seeing only S.A.R. engines for the past three weeks. No. 749, of the same class, took over here; she really hit the high spots to Ballarat making only one stop to cross R727 on a west-bound passenger at Beaufort. For some distance we paralleled the highway and literally left road traffic standing, with five cars and a van, No. 749 clocked one mile in 56 seconds. Tea followed at Ballarat, under the huge station arch, which seems so unnecessary.

Leaving Ballarat, the Warrenheip Bank offers stiff opposition with a grade of 1 in 52. Other than this, it is relatively easy going into Melbourne, the notorious Ingliston Bank — 9 miles of 1 in 48 — being down grade in this direction.

The west-bound "Overland" was passed in the suburbs, the sudden roar of the straining diesel motors making us out of our seats with fright. Right on the "advertised", at 8.10 p.m., No. 749 glided into an almost deserted Spencer Street No. 1 Platform, and our trip was completed. Not so spectacular as the arrival of the "Overland", perhaps, but we were content. We had come a different way, and had seen a lot of new country.

[Editor's Note: Since the foregoing was written, the broad gauge has reached Mount Gambier, and a passenger service is provided by the S.A.R. The V.R. has yet to follow suit.]

Railways in Australia

Produced by Railway Enthusiasts for Railway Enthusiasts

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Transport Vital to Nation

N.S.W. MINISTER SPEAKS OUT

In two radio talks, on 10th and 17th June, respectively, the N.S.W. Minister for Transport, Mr. C. Martin, stressed the vital importance of transport to Australia's economy. He deplored attacks on the alleged insolvency of the N.S.W. Railways, pointing out that, on a commercial basis, the system has paid handsomely.

We give the substance of these talks in place of our usual editorial.

At the meeting of the Australian Transport Advisory Council on May 21, I stated that failure to solve

ICI ON PARLE FRANCAIS

Monsieur,

Je m'adresse à votre revue, désirant obtenir un correspondant, parlant français, car mon anglais est très pauvre, je connais que quelques mots. Nous pourrions nous entretenir sur les questions ferroviares et de la vie courrante de nos deux pays, et échanger des revues et journaux ferroviares — j'ai lu avec grand interê les articles concernant le chemin de fer en Australie, dans notre revue ferroviare "La Vie du Rail Notre Métier." . . .

The foregoing is the opening paragraph of a letter from a French railfan, René Klemens, who is also a railwayman, employed at Angers, on the Western Region, French National Railways. If any of our readers who can write French would care to take up M. Klemens' offer, his address is:—

Gare de QUINCE-BRISSAC (Maine et Loire), France.

transport problems could well smash Australia's economy.

There is no doubt that the problems of transport are second only to those of defence in their tremendous and growing impact on the finances of the Commonwealth. It was proper that my view should be expressed to that meeting as the Council comprised the Transport Ministers of every State and five Federal Ministers, gathered together to discuss those pressing problems of transport common to all States and, indeed to the world.

The national aspect of transport is, unfortunately, too often forgotten when cost and deficits in the services are being used by many critics as political footballs.

The rich products of our lands and industries would rot and rust in idleness if speedy and inexpensive means did not exist for their transportation to the markets of our country and of the world.

Another point so often overlooked is that our New South Wales transport systems carry a huge burden or social service in concessions for children and pensioners, and in such matters as the railways carriage of starving stock.

With this in mind, and knowing also that Governments are being called to the aid of bankrupt enterprise in transport, I pointed out to the Council that New South Wales will pay this year about £M1½ in payroll tax. This is surely unjustifiable. My view was not shared by the Federal Ministers present, although I suggested as well that the tax, as imposed on State-owned undertakings, is unconstitutional.

On another matter, however, a considerable advance was made. I drew attention to the present position with regard to petrol tax. This tax levied on petrol by the Federal Government at the rate of 10d per gallon on imported petrol and 8½d. per gallon on petrol refined locally, yielded a total of £M26¾ in the last financial year. There is no doubt that the yield this year will be considerably more.

The purpose of the tax is to finance work on roads. Last year the Commonwealth retained a total of £M11¾ whilst New South Wales obtained approximately £M4, or a little more than one quarter of the total amount raised. This to my mind, is grossly unfair as the New South Wales motorist pays in more than a third of the total tax!

The amount available from petrol tax last year was completely inadequate and no one will deny that our urgent need is to provide our State with new all-weather roads as well as to repair and maintain our existing highways. The dismal situation at the moment —and there is certainly no need to conceal it—is that we can afford only to patch and mend the roads, not extend, resurface or reconstruct.

The system which operates to determine the New South Wales quota of petrol tax virtually robbed this State of £860,000 last year and something must be done to ensure that we receive a larger slice of the cake to which we contribute the most of the ingredients. Delay in work on our main roads could be disastrous. Our highways still exhausted from the mighty load of the war years, must be restored to perfect condition so that in any future time of crisis they will again act as blood vessels for movement and supply.

The Federal Ministers present, rightly regarding the matter as one of national importance and not as a mere political issue, undertook, through the Chairman, Senator McLeay, to raise the question with the Federal Cabinet. This, in itself, is a big advance and when transport problems generally are discussed on the basis of our national welfare much will always be gained.

The overall problem is gigantic! All over the world public transport is on the dole! The whole course of our economy and also of our civilisation depends upon how resolutely we tackle this job.

The less thoughtful critics of the New South Wales railway system have developed one favourite theme which is virtually ground out like the wheezing of a barrel organ. These critics, when shouting stories of rumoured deficits—always grossly inaccurate—make a great show of alarm and concern that the States' consolidated revenue should be called upon to finance railway deficits.

Of course it is true that for the financial year 1951-52 there was a deficit of £2,452,087 and this gap between expenditure and earnings had to be met by the State

However, the railway operations had, for that year, to finance a charge of £6,121,000 for interest on loan capital, amounting to more than £M217½. This tremendous burden of indebtedness is carried by the railways and it can be anticipated that interest charges on the capital debt this financial year will exceed £M9.

Now to this complaint of deficits and the new cry "The State carries the railways,"—the favoured platform of the political sensationalist. This cry is usually linked with a passionate demand that our railways should be run "as a business".

The official accounts of railway operations for 97 years, i.e., from 1855 to 1951 reveal that a profit of £M206½ was made! £M206½! This means that with the capital debt of £195,800 000 as it existed in 1951 the return from the investment was £3/6/2 per cent! This good business? The sternest supporters of "private business" would surely regard this as a delicious dividend.

Indeed, in certain years, the percentage of profit has been five per cent. and even as high as 5½ per cent.!

If a proper proportion of that profit made over 97 years had been set aside to pay off the capital debt the debt itself would not now exist and the result last year would have been a profit o falmost £M4 on last year's operations instead of a deficit of £M2½.

From all this emerges the fact that the railways have brought to the State of New South Wales great financial benefits. The advantages given to the States by the railways do not end there. In addition to profit on operation, the railways have made yearly contributions to other industries by a direct loss of revenue in concession rates for such matters as carriage of starving stock and fodder. Last year that contribution was close to £300,000 and the average over the year is £M¼ per annum!

The railways have thrust out lines, essential for the development of New South Wales, where no profit could be expected, brought to the Treasury a great deal of cash in land valuation and taxation.

There has not been one year in the whole history of railway operations where the service has failed to show a profit after meeting working expenses! This is the perfect answer to the "run the railways as a business" critic.

The failure to show profits has flowed from interest and charges on the capital debt — likely to be £M9 this year! I repeat that the profit earned by the railways after paying the working expenses has more than paid back the capital invested, and we still have in this State an asset far in excess of the value of the capital.

The average dividend from the capital — if we apply this much-praised "business" basis, is £3/6/2 per cent. — is this good business?

The final answer to the critics is that no "private business" could or would carry the developmental and social service burden of the railways. Yet even with that, the prophets who gleefully foretell a giddy deficit of £M7 this year in railway operations, will be thoroughly confounded.

Model Railways

STEAM — CLOCKWORK — ELECTRIC
ALL GAUGES

With the rejuvenation of R in A, the Model Railways section will benefit to the extent that our Managing Editor will allow more space for the hobby.

In order that we can justify the use of additional pages, you, the reader and Model Railway Enthusiast, are asked to co-operate by sending in items of interest. We know that most modellers are busy these winter nights working on models and the layout, but you must have a few spare minutes at times, so how about letting us know what you are doing.

What we want are details of your layout and hints and kinks developed during your various construction projects. Also if you have any questions, complaints or comments, don't hesitate to write us.

Here, in Australia, the model societies are so far apart geographically that what takes place in one State is very seldom heard of by those in other States. Hence, we suggest that club secretaries avail themselves of our pages as a means of publicity and by so doing help boost their club membership and assist in binding together the Australian Model Railway fraternity.

MODELLERS AND CLUBS IN THE NEWS

Russ Siddall, a member of the V.M.R.S., A.M.R.A. and the Victorian representative of N.M.R.A., has recently taken another bow by winning the H.O. section of the V.M.R.S. contest for V.R. type "T" van. Since then he has mass-produced a few more of these vehicles and has now got as far as the cutting out stage for a V.R. "Z" van. His other equipment built recently has been of V.R. prototype, and it looks as though he has scrubbed the Yankee trend altogether.

Dr. Stephen Suggit, a prominent member of the Brisbane Model Railway Club and Queensland representative of the Australian Model Railway Association is at present devoting much of his spare time to the club. He is chief point layer on the new H.O. layout which is now under construction. A wise move by the club, having one man on the point laying job, as they can then blame the Doc. if derailments occur. However, knowing the quality of work the Doctor produces there should be no cause for even the slightest pun in this respect.

The South Australian members of the N.M.R.A. have banded together and formed a chapter which is thought to be the only of its kind outside of U.S.A. The members meet at each other's homes, and run trains — play and talk railways to all hours.

What next? Claude Henderson has now gone into T.T. He has recently changed from H.O. to Ho gauge on 16.5 mm. track, and now to microbe gauge. In fact, he turned up with a Rokal T.T. set at the A.M.R.A. Victorian Branch visitors' night. With the flash switch board he purchased a few months ago he should be able to design something like a suit case T.T. layout fully automatic.

Cec. Harrison, the Secretary of Brisbane Model Railway Club and a member of N.M.R.A., is one of the few secretaries who can attend to the club's business and still manage to do some modelling. It has been passed along the line that his new steam lined C3 is worthy of high praise and has plenty of intestinal fortitude.

The Melbourne Mecanno Club, organized by Len Ison, is in full swing again now that the winter is here. Len started this club about 20 years ago and has kept it going successfully ever since. The membership is limited to 12 owing to the meetings being held in a private home but, in spite of this limitation, the standard of work is high and broad in scope. All models of mechanical devices are built in mecanno and are fully working. These are combined with a horrible "O" gauge layout. The control of the system is electrical and is capable of being operated from one master board or from individual sections.

The little man with a big reputation in Melbourne is Ernie Mainka. Ernie is a member of A.M.R.A. and V.M.R.S. His latest model, a V.R. "R" class steam locomotive, in "O" gauge was given a draw bar test at the Victorian branch A.R.M.A, visitors' night meeting along with his "A2" Guess what! The "A2" out pulled the "R", but what the "R" lacked in adhesion it made up for it in looks. A fine model, Ernie.

Jack May, a man of experience in the hobby, enjoying membership of A.M.R.A., A.R.L.H.S. and N.M.R.A., is now deeply involved in the onerous position of Editor of the A.M.R.A. Journal. His initiative and literary skill have been instrumental in bringing about the great increase in size of this publication. Jack's main worry is the scarcity of readers' articles — he's not on his own there.

Well, that is all the space we have for the gossip but we'll have more for you next month.

CONSTRUCTION HINTS

Model Spaghetti

Not claimed to be original but humorously of interest is this method of making scale spaghetti. Obtain some steel wool and break it up into small lots — large enough for a good scale feed, give it a coat of off-white paint and add a dash of red paint for sauce. Serve hot on your diners' plates.

Realistic Ballast

At first this hint may seem dangerous to mechanisms but we have been assured that it is quite safe. When you have laid your sleepers and before the rails are laid, mix up some cheap glue and coat the sleepers and road bed liberally therewith. Then sprinkle beach sand — the type which is coarse is best — all over the glue coated parts. Brush off the surplus and smooth off to sleeper height when it sets, you have the real thing in miniature.

Scenery Planning

Draw up your layout on a piece of flat board to a scale of say 2 in. to 1 ft. At places where the railway will be above the low level, model it to scale height with strips of cardboard. Then, when the layout skeleton is completed, obtain a quantity of modelling clay and mould the hills and valleys, etc., to fit the track plan. You then have a preview of the whole effect and may save mistakes when building up your actual scenery.

Drilling Holes in Small Parts

To drill holes in parts that are too small to handle, solder to a piece of brass or like metal which is large enough to hold in a vice. After drilling, unsolder the part and clean off the solder. Hence no torn fingers.

Melbourne Model Shop Expands

Those of our readers who are acquainted with Mr. Peter Duckett will be interested to learn that he is now a partner in the Model Dockyard, the model railway section of which has been enlarged considerably.

SOLVING LAYOUT PROBLEMS

By Trevor J. Hosking

The space problem, as many of us have found, is one of the main setbacks to the model railway hobby in Australia — in fact, in the world — to-day. Space is the stuff into which a model railway empire is packed; in garages, attics, basements, spare rooms, and out in the wide, open spaces. But too many potential modellers are put off because, as they say, they have enough space for a layout, but their trains will not have enough room to move in that small space.

If you have only a little area in which to "play trains", you cannot expect to incorporate such luxuries as 4-track main lines, stub-end terminals, hump marshalling yards and the like; you simply cannot work up a pattern of rails to fit into your space. But you can plan a small layout, with realistic train movements, with an industry or two to keep the operator occupied and a scenic make-up to give an atmosphere of much larger space. Tunnels, bridges, streams, population, houses and vegetation combine to help with this and after your layout is built you will feel as though you are in a world of your own, operating a railway; serving the industries and the lives of many people of whom you feel yourself one.

Well, snap out of it, 'cause you haven't planned that layout yet!

Supposing you have a small area set aside for your empire. You realise your limitations but you want a worthwhile layout from the operating point of view. You decide on the type of railway you want to operate (not forgetting the gauge, Roger!) — perhaps a mountainous terrain with single line, crossings and grades.

Or maybe it is an ordinary main line section, continuous or end-to-end operating, or — which is usually popular with limited railroaders — a small, single line with a typical country terminus, a couple of intermediate halts and a tunnel in which trains "hide" pending their return from an imaginary connecting station. Many other systems are used also — narrow gauge and tramway lines being examples — and to these, also, space-saving principles may be applied.

Your gauge is your second limiting factor, as O gaugers naturally need more space than HO gauge enthusiasts, and so on. The merits of the various gauges will not be discussed here, as I am likely to suffer henpecks and cackles from now on, were I so rash. But one thing must be conceded to the smaller gauges — more railway will fit into a given space (I know that O-gaugers will reply that you can hardly see the damn midgets) and, while O gauge models are larger, if you take an S, HO, OO or TT model by itself, removing all O gauge bits and pieces from sight — if you work among HO models — you will soon find yourself ready to fight anyone who says anything against them. Despite this, I am an ardent O-gauger, but I do realise my limitations and try accordingly to squeeze in somewhere the features desired on my model railway.

(Mr. Hosking will be writing on ideas suitable for incorporating in any layout confined to a small space.—Ed.)

Club Notice Board

This column is available free of charge to Railway, Tramway, Engineering and Model organisations. Alterations are made at quarterly intervals. Notices should be as brief as possible.

Adelaide Model Railroaders

meet every Tuesday night at 8.00 p.m., either at the Y.M.C.A., Gawler Place, or members' homes. Visitors welcome in either circumstance. Secretary: J. Greenwood, 15 Buttrose St., Da Costa Park, S.A. Phone X 3233.

Australian Electric Traction Association

MELBOURNE: V.R. Institute, 3rd Friday of each month, at 8 p.m. Secretary: W. G. Mercer, 18 Embling Avenue, Malvern, S.E.4.
SYDNEY: Railway Institute (Devonshire Street), 3rd Thursday of each month at 8 p.m. Secretary, R. Young, Box 2266, G.P.O., Sydney, N.S.W.

Australian Model Railway Association

New members welcomed. Write to the Secretary, 105 Blake St., Reservoir, Vic.

Australian Railway Historical Society

SYDNEY: Railway Institute (Devonshire St.), 2nd Tuesday of each month. Secretary: H. McDonald, 3a Oxford St., Burwood. N.S.W.
MELBOURNE: V.R. Institute, 4th Thursday of each month. Secretary: R. T. Sloggett, 12 Ayr St., Blackburn, Vic.

Brisbane Model Railway Club

Meetings held on 1st and 3rd Thursday of each month at 36 Goulburn St., Kedron, at 8.00 p.m. Secretary: C. Harrison, 110 Haig St., Stafford, N.3 (to whom all enquiries should be made). Gauges O and HO/OO.

National Model Railroaders' Association (Australian Area)

welcomes new members. Write to The Area Representative, N.M.R.A., 22 Whish Street, Windsor, N.3, Queensland.

Northern Suburbs Model Railway Association.

Northern Suburbs Model Railway Association meets on the second Thursday of each month in the Artarmon Presbyterian Church Hall, near Artarmon Station (east side) at 8.00 p.m. Visitors welcome. Hopes to cater eventually for gauges HO to 1, trains and trams, two-rail, three-rail overhead. For further information, contact Acting Secretary, A. W. Perry, 126 Hampden Road, Artarmon (JA 3069).

Queensland Society of Model Engineers

meets 4th Monday of each month at 8 p.m. Contact the Secretary, C. H. Garner, "Elsinor," Gray's Rd., Gaythorne, Brisbane, Q.

South Australian Society of Model and Experimental Engineers holds meetings on the 2nd Tuesday of each month at 8.00 p.m. in the Club Room, "Sasmee Park," off Millswood Crescent, Millswood. Secretary: V. H. Messer, 43 Denning Street, Unley, S.A.

Sydney Model Railway Society.

meets at 273 Castlereagh Street, Sydney (4th Floor), each Monday evening from 6.30 to 9.30. When Monday is a zoned day, the meeting is held on the following Tuesday. Visitors are welcome. Bruce R. Davies, Hon. Secretary, Pacific Highway, MT. KURING-GAI, N.S.W.

Sydney Society of Model Engineers

Exhibitions every Saturday afternoon at the Exhibition Park, 190 Parramatta Road, Ashfield.
Meetings last Saturday night in each month at 8.00 p.m. in Club House, at above address. Interstate visitors given warm welcome.
Secretary: R. R. Steward, same address.

Victorian Model Railway Society

meets 3rd Wednesday of each month at 8 p.m., at the Model Dockyard, Swanston Street, Melbourne. Visitors welcome. Secretary: J. H. Hooker, 1 Shaftesbury Avenue, MALVERN, S.E.4, Vic.

W.A. Model Engineering Society

meets on the 1st and 3rd Wednesdays of the month at 8.00 p.m. in the Railway Institute, Wellington Street, Perth. Secretary: T. Norman, 54 Woodsome Street, Mt. Lawley, W.A.

Model Railway Register

The Australian Model Railway Association is compiling a register of Model Railways. The Association asks **all** modellers to assist in this difficult task by sending in the name of their railway, the scale, the gauge, the type of pickup, the date when the name was first thought up and, of course, the name and address of the modeller. This information is to be sent direct to Mr. David Gross, Assistant Secretary, A.M.R.A., 13 Heath Street, Sandringham, S.8., Melbourne.

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The Tasmanian Railway and Model Railway Club has recently been established with the aim of meeting the needs of both full-size and miniature railway enthusiasts. There is already a membership of 25 in Hobart and a Launceston branch is scheduled to commence on 3rd July.

Principal office-bearers at Hobart are:—

President: P. D. Mottram.
Vice-President: B. Raynor.
Secretary: K. R. Andrews.
Treasurer: W. D. Bell.
Liaison Officers: R. Raynor (Models), C. Day (Prototypes).

The club will subscribe to various suitable periodicals, which will be available for perusal by members and there will be film evenings, as well as visits to railway installations.

Exhibition to be Held

The biggest event in the club's calendar this year will be a display at the forthcoming Royal Hobart Show.

New members will be given a warm welcome. Get in touch with the Secretary, whose address is 386 Park Street, Hobart, Tasmania.

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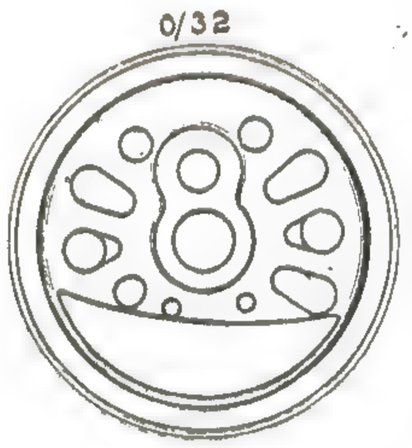

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Book Review

BRITAIN'S RAILWAY LIVERIES

Colours, Crests and Linings, 1825-1948

By Ernest F. Carter

(London — Burke Publishing Company Ltd.)

To that large body of railway enthusiasts who are particularly devoted to the railways of Great Britain prior to the 1923 amalgamation, this book will undoubtedly represent a prize which must be obtained, cost what it may. To those of us who are interested in railways generally it will appear as a welcome and valued addition to our library.

Mr. Carter is universally known in the model railway world and his books on that subject have often been discussed in this journal; it will be remembered that thoroughness was an outstanding feature of his work and this is even more so with his new work. To many of us, "Caley" engines were blue, and some will recall that passenger engines were of a lighter shade than freight locomotives. To Mr. Carter, however, it is a matter of just what shade of blue they were at any given period, and in pursuing this problem he has considered not only the inadequacies of official records and the fallibility of human memory, but also the effects of time on old prints and the different appearance of the same colour when applied to different surfaces.

The result of all this investigation, which involved a near-permanent residence at several libraries in turn, is tabulated and set out clearly, each colour being referred to a chart of 50 colours included in the work. The data are liberally interspersed with readable history and comment, and there are eight full-colour illustrations, as well as 20 pages of photographs and diagrams. Each railway company is listed alphabetically. Part II covers the "Big Four" from 1923 to 1948.

The author claims that this is the first work on the subject; it must certainly be the most painstaking on any one of several subjects.

(320 pp. 5½ in. x 8½ in., cloth bound; available from bookshops. We do not have the Australian price at the time of writing, but the price in England is 36/-.)

DIESEL LOCOMOTIVES AND RAILCARS

By Brian Reed

London: The Locomotive Publishing Co. Ltd.

Although written before the recent dramatic development of the diesel-electric locomotive in the U.S.A., this book foresaw that event. It is indeed the most remarkably objective and unbiassed review we have yet seen, and sets out the merits and limitations of the diesel (both with electrical and with mechanical transmission) clearly and concisely, backing up arguments with statistics. In addition to tracing the development of the new form of motive power, the author reviews the situation as it then existed on railways throughout the world, not overlooking either Russia or Siam, to quote the more exotic references.

Railcars, their construction, maintenance, and uses, are also covered in detail, and throughout the book are illustrations, diagrams, and graphs in profusion.

Definitely recommended for the serious student of motive power. (240 pp., 8½ in. x 5½ in., paper cover; obtainable from J. O. Smith, 9 Campbell Street, Punchbowl, N.S.W.)

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MAY-JUNE, 1953

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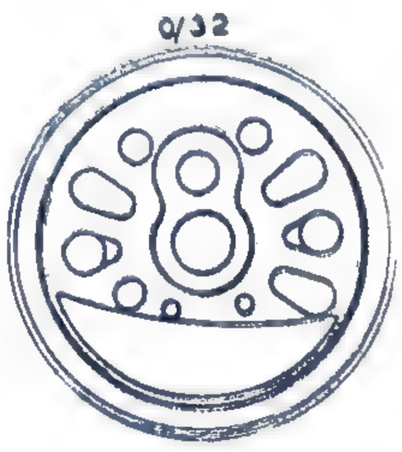

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DIESELS DON'T DO EVERYTHING

Much nonsense is still being written about diesel electric locomotives both by their advocates and by their opponents. (This magazine, incidentally, has been accused, within the same week, of "going diesel" and of being too hide-bound and "steam-conscious".)

The facts are that diesel electric locomotives have enabled services to be provided which could not be provided prior to their introduction, notably in Victoria, and have improved railway finances, notably on the Commonwealth Railways. They cannot do everything, however, and the Victorian Railways appear to be having some trouble in finding jobs for their growing fleet. The diesel is rather like the genie from the bottle, and can easily become the master instead of the slave. It is true that diesels can be switched on and off at will instead of requiring the consumption of coal and water to maintain a head of steam while standing idle. It is equally true that they cannot be allowed to stand idle. Every minute is costing money in interest and depreciation on the huge capital outlay required for their purchase, so timetables must be altered to fit the locomotives instead of providing locomotives to suit the timetables.

Their high speed on poor track (on good track steam locomotives can hold their own) seemed the answer to a money-starved per. way engineer's prayer, but it was forgotten that rolling stock has to run at the same speed! A trail of goods from the Mildura fast freights and the muttered imprecations of passengers and staff on the Mildura Expresses emphasize that there is no short cut to Paradise — not even with diesels!

COVER PICTURE

This month's cover is taken from a photograph by Mr. John Buckland. The train is a Down Cootamundra passenger hauled by 36 class 4-6-0, No. 3610, leaving Marrar Vale, N.S.W., on the Main Southern line of the N.S.W. Railways.

NEWS WANTED

Don't forget to send in every possible item of news to our news editors What is stale to you will be of great interest to others.

L. Lloyd Holmes,
Batten Street,
Seymour. Vic.

News items should reach him by the 20th of each month.

PUBLICATION DATE

Although dated May-June, 1953, to preserve continuity, this issue was actually published late in September.

About this magazine

We have once again used a "double-barrel" date for this issue. This practice will continue until we are right up-to-date. Subscription cards will, of course, be altered, so that all readers whose subscriptions are current will receive the number of issues for which they have paid.

It has been suggested that we should "skip" several months and publish issues with current date-lines. While this is of value for retail sales, it causes confusion among subscribers, particularly those overseas, and we are inevitably deluged with a shower of enquiries which we have not time to answer.

For the present, there will continue to be one issue each month and, so long as you renew subscriptions promptly, there will be no further delays to publication from financial causes.

Once again, we urge all who have not a subscription to send their 15/- now.

We want to make this magazine truly Australian and comparable with overseas publications of a similar type. It can be done if all Australian enthusiasts subscribe.

Apology Due

An apology is due for the condition of many copies of our last issue. In our haste to get an issue out after the long delay, we took short cuts including using certain defective parts on the press. You should find this issue much better, but we shall not be content until a flawless copy can be guaranteed. The present press is only a stop-gap, and a more suitable machine will be obtained when finances permit.

Model Section

Experience with model railway journalism has been far from satisfactory, but the infectious enthusiasm of Dave Gross inspires us to hope for better things this time. As he says, if you send in a contribution, we'll use it.

That goes for railway news and articles of all kinds, and we can also use a limited number of photographs once again (they must be really sharp and clear, though).

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Railway Round-up

News from Australian Railways

Edited by Lloyd Holmes
Contributions Invited

N.S.W. RAILWAYS

Parramatta-Penrith (Western Line) Works

The cutting between Parramatta and Westmead is being widened, and the embankment built up in preparation for quadruplication and electrification. Quadruple track already exists beyond Westend, the heavy earthworks necessary through Parramatta Park have been deferred until now. Gaps between the new overhead structures are being limited with the erection of these structures at stations. The yards at Blacktown and St. Mary's constitute the longest gaps now. Track is being laid on and in the vicinity of the Seven Hills flyover although the actual bridgework has yet to be placed. The new platform for the Richmond branch at Blacktown is progressing, and the abutments of the new road bridge which is to replace the level crossing at the western end of the station are partly completed. Overhead structures spanning four tracks are being used throughout, although it is not intended to carry the quadruplication right through to Penrith at present. All four platform faces of the new Doonside station are in use. A retaining wall is being erected at the Sydney end of Penrith yard, an the Down side.

Lidcombe-Parramatta

No progress is reported between Auburn and Clyde, although additional trackage has been in position here for some time.

LOCOMOTIVE NOTES

C36 class ten-wheeler, No. 3643 has been re-boilered recently with the new, standard boiler common to this class and the 35's. The Belpaire firebox, and the new cab (similar to those of the 58 class) combine to give the loco a distinctively different appearance.

Also re-boilered recently were C38 class Pacifics 3805 and 3825. Mountain type No. 5703 (D57 class) is virtually a new engine, having been overhauled completely at Chullora shops. 5708 of the same class is being fitted with a new frame.

Tenders, frames, boilers, cabs, and smokeboxes for new D58 class 4-8-2's Nos. 5814 to 5825 are stacked at Chullora shops.

No. 5920, the last of the twenty Baldwin-built Mikados, entered traffic in April.

New Diesel Set for North Coast

Recently burnt out at Broken Hill, the "Silver City Comet" is being rebuilt at Chullora. A new train of this type is to be built for the North Coast run. The first 4-car diesel set, originally on the "North Coast Daylight" service, is undergoing extensive alterations.

Electric Locomotives to Penrith?

It is expected that electric locomotives will be running as far west at Penrith (?42 miles from Sydney), late this year. Erection of overhead structures is proceeding rapidly between Parramatta and Penrith.

Containers Successful

More than 150 LCL (less-than-carload) containers are in service between Sydney and Melbourne. They have an approximate capacity each of 320 cu.ft., and carry 5½ tons.

VICTORIAN RAILWAYS

LOCOMOTIVE NOTES

S Class To Go?

It is rumoured that the four famous S class streamlined Pacifics are to be scrapped after Christmas. Already they have surrendered one of their regular assignments — the working of the "Albury Express" — to the B class diesels. Their duties are now confined to working the "Spirit of Progress" and, infrequently, the "Albury Mail". The S class were built in 1928-30 and streamlined in 1937.

After a spell at Newport shops, H class 4-8-4, No. [illegible], is back on the road running the Interstate Fast Freight No. 105 (9.25 p.m. ex-Melbourne) to Albury, returning with No. 44 (9.20 a.m. ex-Albury). For the first time since H220 entered service in 1941, double heading is now permitted between Melbourne and Seymour. Either an N (2-8-2) or K (2-8-0) may be used, with a load limit of 1,000 tons. The "bank" engine is detached at Seymour and the H continues unassisted to Albury.

R class Hudson, No. 710, has been running tests on the North East line with the Dynamometer car attached, to measure fuel consumption with washed Lithgow coal.

Stock Cars Needed

65 new 4-wheeled cattle cars and 100 new 4-wheeled sheep cars built at Newport have been issued to traffic. Last stock season the V.R. had to borrow a number of S.A.R. bogie cattle cars to cope with the ever increasing movement of cattle in Victoria.

Model Loco Steals the Show

For Ararat's Coronation Day celebrations the local Locomotives Depot Social Club borrowed the V.R.'s model of C class 2-8-0 No. 1. C1 was decorated with railway posters, including the current "Men of Service" series (R. in A., Jan./Feb., 1953). Realism was effected by the emission of smoke from the stack, and the reciprocating motion of the side rods, pistons, etc. It was a "busman's holiday" for some club members who, armed with the inevitable oilcans, kept hotboxes at bay by frequent oiling around.

Diesel Developments

V.R. B class diesel-electric locomotives are being delivered at three-weekly intervals. B76 entered traffic on 27/7/53. By June last, the diesel fleet, which then numbered thirteen, had amassed over one million miles of running. Class leader No. 60 had run over 166,000 miles.

The following A2 class 4-6-0's have hauled their last train: Nos. 820, 843, 850, 907, 918, 920, 985, and [illegible]: the last two mentioned were oilburners. D3 class 4-6-0 No. 620 has also gone to the torch.

Brown Coal Fuel

The R class locomotive being fitted to burn pulverised brown coal similarly to X32 will not be in service until early next year, when it is hoped that overhead fuelling bunkers will be in use. The matter will reduce fuelling time considerably.

Old Locos Rejuvenated

Rather surprisingly, locomotives received at North Melbourne Locomotive Depot after a full overhaul at Newport shops include four A2's, two of which (Nos. 884 and 932) are of the Stephenson type. The others are Nos. 986 and 994.

Y class 0-6-0 switcher No. 118, D4 class 4-6-2T No. 285, and D2 class light 4-6-0 No. 596 have been equipped with automatic couplers. In the case of No. 596, the original tender has been replaced by a

spare A2 type tender which was surplus at Loco. The tender platform had to be relocated to line up with the cab floor and the coal bunker sides had to be cut away slightly to avoid fouling the cab roof. This loco has not been equipped with an electric headlight.

Interesting Freight

On 25/9/53, the North East Fast Goods, hauled by X32 (the brown-coal burner) and C13, had an interesting load which included a number of horse boxes (both bogie and 6-wheeled), tarpaulin-covered M class cattle cars — both carrying valuable animals from the Melbourne Show, and numbers of containers in bogie gondola cars (QR and E classes).

New-type Cars for "Overland"

Two AS class steel air-conditioned cars have been converted to ABS (1st and 2nd class sitting) type — the first such cars in service — for use on the "Overland" expresses to and from Adelaide. These cars carry passengers to and from intermediate stations, which duty was formerly performed by heavy wooden E cars or S.A.R. day cars.

NEW GIPPSLAND BRANCH
Yallourn Direct Line in Use

The direct line between Moe, Vic., and the huge brown coal mines, power station, and briquette factories at Yallourn, was brought into use on Sunday, 20/9/53. Engineered for double track operation, only single track is laid over the new route at present. Up trains, mostly empties, work to Yallourn over the original line through Herne's Oak, returning via the new line, in a tramway-type balloon loop operation.

Easier grades on the new line permit 1,500-ton loads to be hauled through to Melbourne by a single engine. Previously such trains had to be double-headed. The line will be electrified in due course and may ultimately form part of the through Gippsland main line if a proposed diversion is made (to permit extension of the main Yallourn open cut).

Heavy earthworks, both cut and fill, are a distinguishing feature of the line, which runs through mountainous country. Level crossings were avoided—they are a hazard on the Herne's Oak route.

The eastern end of Moe yard has been altered, and much improved, to provide for the new connection, the junction being just to the east of the road bridge.

DIESELS FOR GOULBURN VALLEY

As soon as strengthening works now in progress on the Toolamba Viaduct are completed, the Victorian Railways will operate diesels as far as Shepparton on the Goulburn Valley line. At the present time only light steam locomotives of the N, K, and D3 classes are used.

NARROW GAUGE LINE FOLDS UP

The 2ft. 6in. gauge Wangaratta-Whitfield line will be closed as from 12/10/53. The last goods train will run on 6/10/53, the last mail trolley four days later. Traffic on this line has never been heavy, the weekly goods train often having only one car. Unlike the three remaining narrow gauge lines, the Whitfield line runs through easy country. Distance is 30¼ miles from Wangaratta on the north-east line.

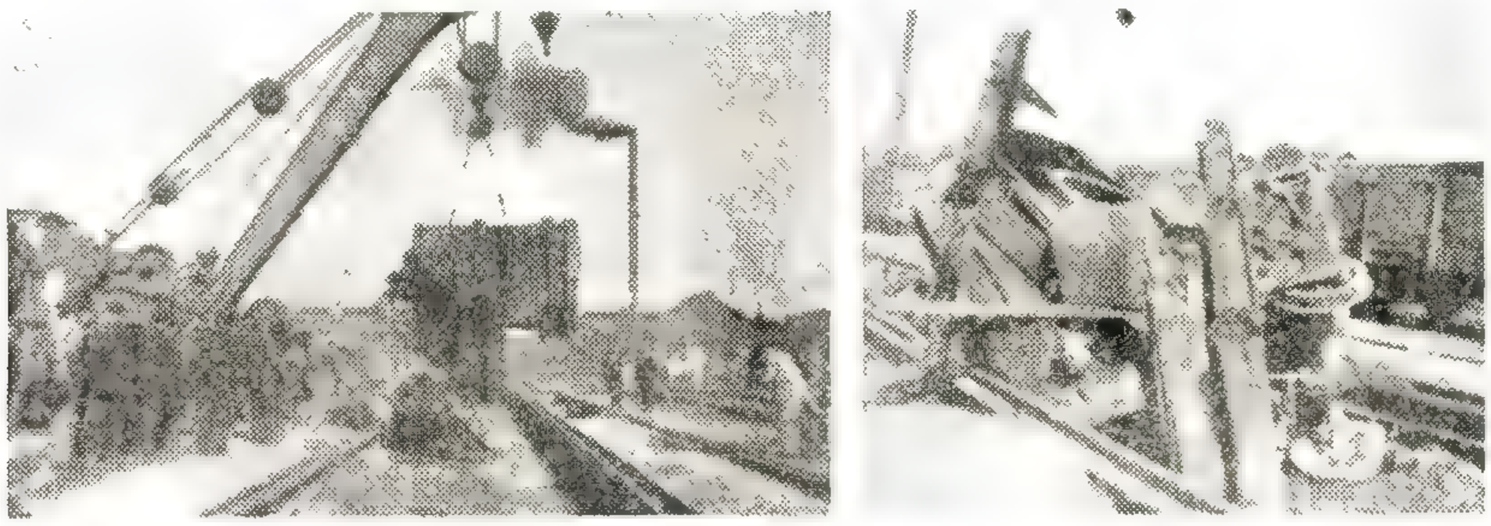
POWDER BY RAIL
Victorian Railways Build New Cars

Despite the advent of the Atom Bomb, there is still a big maket for explosives of the conventional type. Their transport requires careful handling and special vans painted bright red are in use on several railway systems. Age has overtaken much of the V.R. powder van fleet and 20 new P class vans are under construction at Newport Workshops. The steel underframes of scrapped Louvre vans (4-wheeled) are being used, but the new bodies will incorporate the most modern methods of construction; they will be insulated against heat, sealed against dust, and made resistant to stray bullets, while galvanized underfloor sheathing will be fitted to prevent any risk of fire from sparks produced by the action of brake blocks.

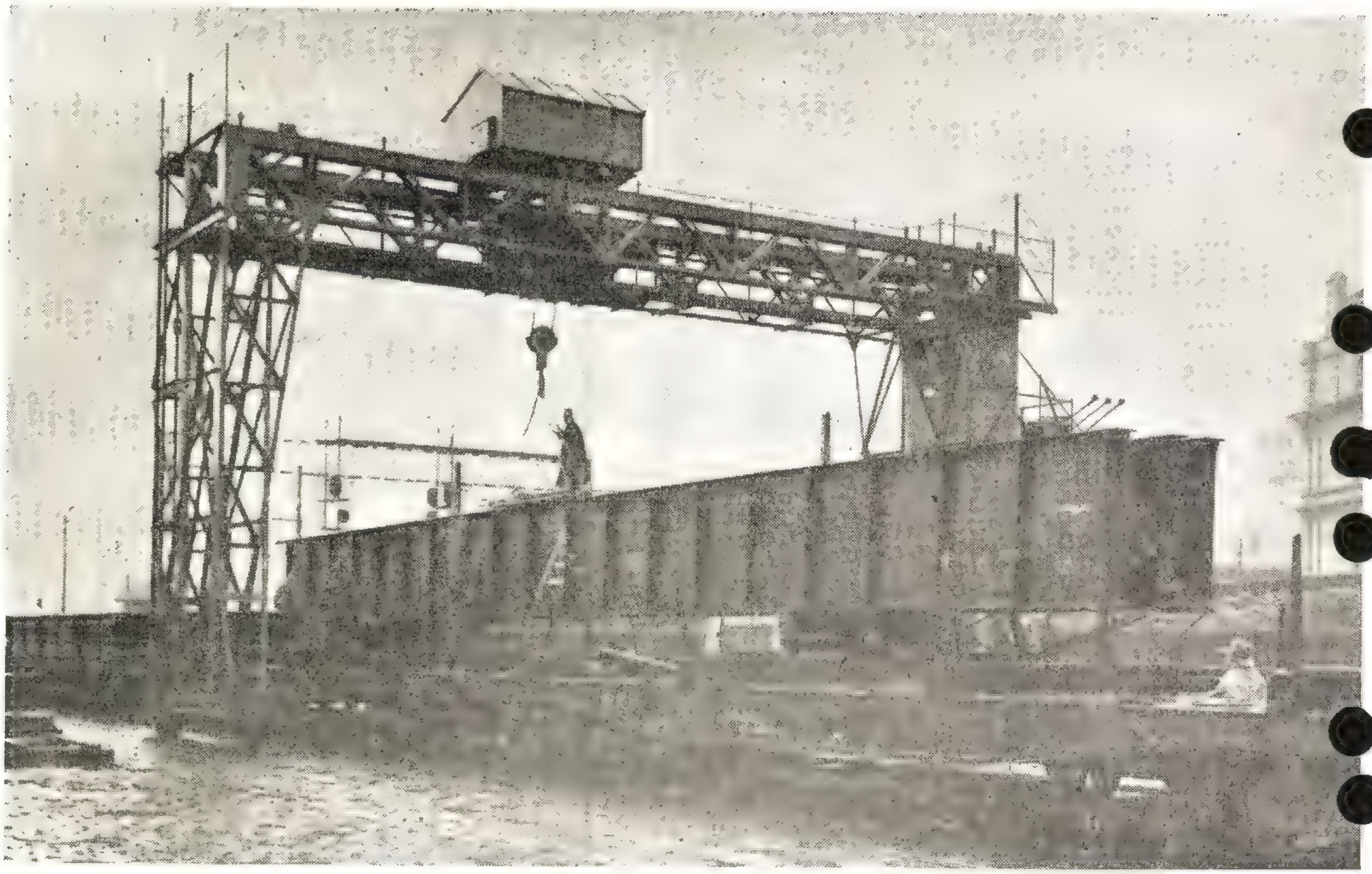
W.A. GOVERNMENT RAILWAYS

W.A.G.R. IMPROVEMENTS
New Interstate Booking Office

As part of the improvements in hand to make rail passenger travel more attractive, the West Australian Government Railways have placed in service a modern booking office for interstate passengers. Comfortable seating is provided in the foyer, and actual bookings are made at six spaces at an attractive curved counter. Interstate travel from West Australia usually involves travel over several railway systems, including seat and sleeper reservations, and the average time required to deal with each customer is 18 minutes, so that the



On 28th July, No. 713 of the South Australian Railways livened up proceedings at Mile End Depot, Adelaide, by colliding with Crane No. 5. As reader Frank Richards' picture shows, No. 5 didn't fare too well. It is understood that the vertical-boilered coffee pot will be rebuilt.



Railways are often called upon to carry unusual loads. Sometimes their own requirements necessitate the use of special vehicles as in the case illustrated above. Large girders for the new 6-track Cremorne Bridge over the Yarra, between Richmond and South Yarra, were loaded on two Q class flat cars. Our illustration shows an electric gantry crane lowering a girder at Spencer Street Yard, Melbourne.

—(Block courtesy Victorian Railways).

office can handle a customer every three minutes at peak periods.

Interstate travel over the "Trans" line is on the increase, and the present service of four trains weekly will shortly be increased to once daily.

The new office was declared open by the Minister for Railways (Mr. H. H. Styants), who received the first ticket from the Commissioner of Railways (Mr. A. G. Hall).

Suburban Services to be Restored

In his address, Mr. Styants referred to the intention to revolutionise metropolitan transport completely during the next twelve months. Full use will be made of diesel railcars, and speeds will be raised. It is hoped to win back traffic lost during the strike.

COMMONWEALTH RAILWAYS

MORE RAILCAR TRAILERS

The Commonwealth Railways are calling tenders for railcar trailers. Gauge is not specified, but it is thought that these cars are required to strengthen the Budd railcar services between Port Pirie, Port Augusta, and Pimba (the station for the Woomera Rocket Range). These services, the first purely local services in the history of the C.R., are at present maintained by three Budd cars, and two trailers which were converted from large petrol-electric motors purchased in the United States.

Other tenders called include concrete sleepers and cast steel coupler heads.

S.A. RAILWAYS

NEW BROAD GAUGE LINE PROVES WORTH

"Overland" The Long Way Round

When a fruit train was derailed at Kiata, near Dimboola, on 13/9/53, the Melbourne-Adelaide line was blocked for 36 hours. Through services were maintained however, by diverting trains via Hamilton, Vic., and Mt. Gambier, S.A. The latter station is the terminus of the latest S.A.R. conversion-to-broad

gauge, completed in June last. "Overland" expresses in both directions arrived several hours late owing to the greater mileage and to speed restrictions over light track. Refreshments proved a problem, but the staff of the small Refreshment Room at Hamilton worked wonders with trestle tables on the platform. The eastbound train arrived at Spencer Street, Melbourne, at 6.15 p.m., only just in time for N.S.W. and Queensland passengers to transfer to the "Spirit of Progress", due out at 6.30.

The additional mileage involved was in excess of 100 miles in each direction and additional delay was caused by the inability to run heavy locomotives over the Victorian section of the diversion. Fortunately, the S.A.R. diesels were able to run as far as Mt. Gambier, S.A., on their side of the border.

Oil Burners for Suburban Work

A correspondent who visited Adelaide late in August reports having seen the following F class suburban tank locomotives as oil burners: 167, 170, 172, 175, 177, 183, 184, 188, 189, 239, 243, 245, 246, 248, 251, 255. while coal burners noted were: 168, 171, 180, 185, 186 236, 241, 244.

(An illustration of one of these engines appeared on page 8 of our last issue).

Outside Advice Not Sought

A suggestion that the South Australian Railways seek the advice of the two visiting transport experts, Messrs. De Leuw and Cather (who are visiting Adelaide to advise on street transport) was declined by the Minister of Railways (Mr. McIntosh). The Minister pointed out that although the railways suffered heavy financial losses, they gave great service to the public and the State. A further suggestion that some payment be made to the railways in respect of the increased taxable value of land due to the opening and operation of railway services was received more favourably.

Losses Reduced

Referring to the loss of £4 million suffered by the S.A.R. in the last financial year, the Premier (Mr. Playford) observed that it was £850,000 less than the previous year, and £1,050,000 less than the year before that. Increased freights and fares, increased traffic, and more efficient working had all played a part in reducing the deficit, he said.

Increased Tonnage

Tonnage handled on the S.A.R. during 1952-53 represented a 4.4% increase over the previous year, with freight train mileage up 5%. For the first time since the war, increased earnings exceeded increased costs. Country and suburban train miles increased by 2½%, however, while passenger journeys decreased by 4%. (It is not stated whether the last-mentioned figure is number of journeys, or ticket revenue).

VICTORIAN RAILWAYS

MELBOURNE SUBURBAN LINES

Unusual Train

One of the most unusual trains ever run on the Melbourne suburban electric system is the 4-car set now in service between East Malvern and Glen Waverley. This set comprises from the Melbourne end: 164 ABM (1st/2nd, motor with driver's compartment at each end); 25D (1st driving trailer); 205T (1st trailer); 32M (2nd motor).

This arrangement is a temporary expedient to cope with growing peak hour traffic. Work on the extensions of platform facilities and provision of new platforms is almost complete, and standard 7-car trains will shortly be able to run through to Glen Waverley from the City.

QUEENSLAND RAILWAYS

NEW AIR-CONDITIONED TRAIN

British Diesels in Service

On July 9, one of the Q.G.R.'s new English Electric Express (Brisbane-Cairns) for the first time. Departure time of this once-a-week, luxury, air-conditioned train is now 9.30 p.m. from Brisbane (Roma Street). The "Sunlander", which comprises 13 cars, is the second of Queensland's new fleet of nine air-conditioned trains on order from Commonwealth Engineering (Queensland) Pty. Ltd., and was placed in service on 4th June last.

Two of the E.E. diesels arrived in Brisbane on June 13, per S.S. "Clan MacDonald", being subsequently assembled at the Rocklea, Q., workshops of the builders. Fully streamlined, the new 1,500 h.p. locomotives cost £80,000 each. Weight in service is 90 tons. Road numbers are from 1,201 upwards. The first locomotive, coloured blue, grey and yellow, was placed in service on 3rd July, after being on exhibition at Roma Street Station during the morning. The practice will be followed of running trial trips to Toowoomba before the locomotives receive permanent assignments.

MEET THE BOYS

No. 1. Lloyd Holmes.

Last issue, Lloyd Holmes became our News Editor. Quite a lot of news has flowed from his pen anonymously in the past, and several of his train pictures have appeared in the magazine from time to time. In private life, Lloyd is a railwayman—he helps the Victorian Railways to keep ticking—and is married to a young lady who manages to survive the trials of a husband who talks railways on the job and off it.

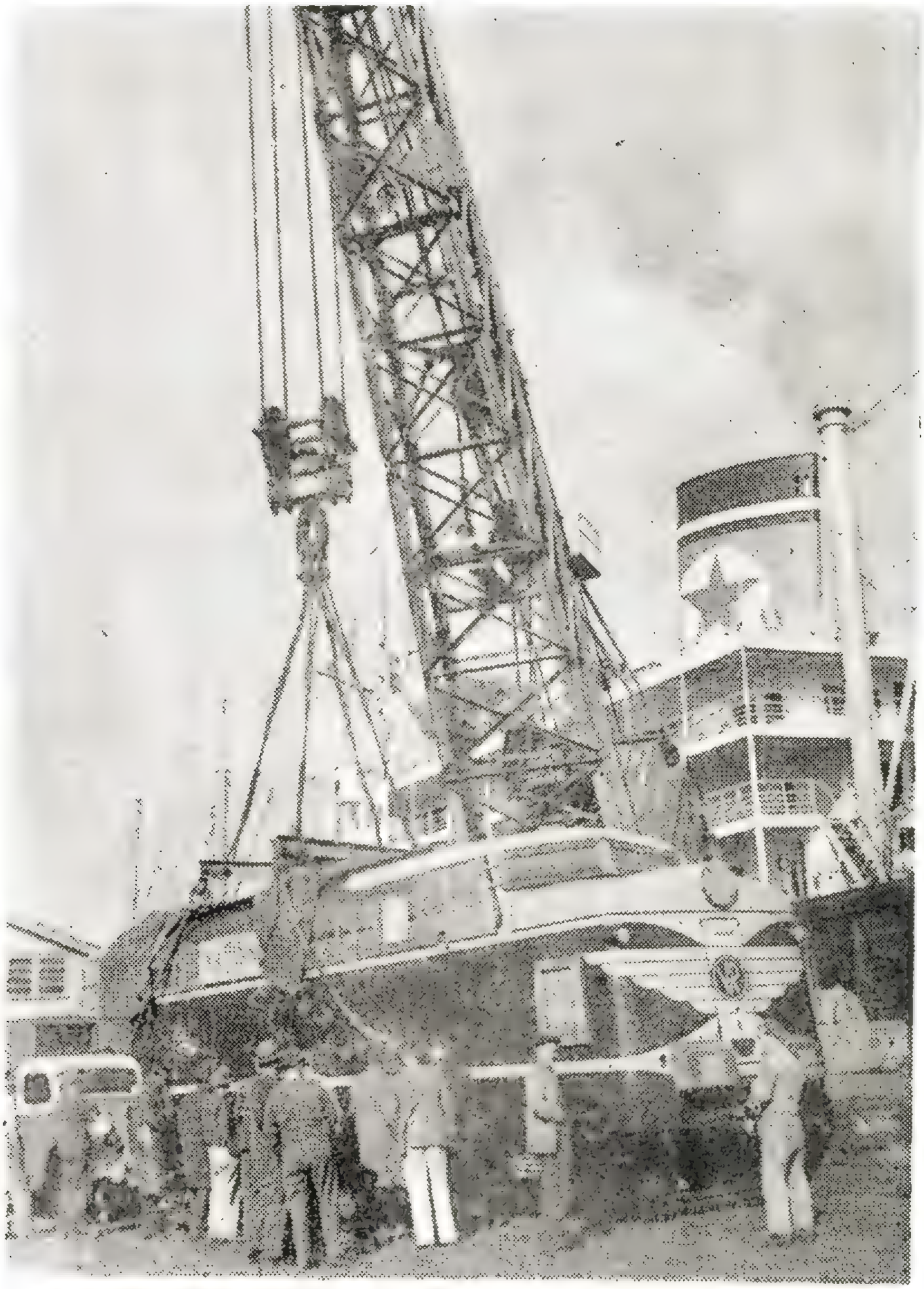
Lloyd's knowledge is not limited to the railways of his own State, but he needs the help of you chaps all over Australia to enable him to keep on turning out up-to-date news. Do help him to help you by sending along every item of rail news you can—it doesn't matter if we get the same item three times; it does matter if we don't get it at all.

Lloyd's address is: L. F. Holmes, Batten Street, SEYMOUR, Vic.

(Other paragraphs about people connected with the magazine will appear from time to time).

SYMPHONY IN STAINLESS STEEL
Budd railcar No. CB3, of the Commonwealth Railways.
One of the trailer cars converted from petrol electric railcars in the U.S.A. is attached (just visible at the right). (Photo. by W. J. Webster.)

The Victorian Railways plan to extend the use of brown coal dust as a locomotive fuel, following successful trials with X class 2-8-2 No. 32. The explosive nature of the dust, which is a by-product of the briquette factories at Yallourn, Vic., renders its handling and transport difficult. Our illustration, reproduced by courtesy of the V.R. Publicity Department, shows three of the specially designed CX wagons used for this traffic at the loading point at Yallourn.



With local manufacturers unable to cope with the flood of orders for locomtives and rolling stock required to rehabilitate Australian railway systems, many orders have been placed in the United Kingdom. Melbourne wharves regularly see the unloading of locomotives for the Victorian Railways. With the completion of orders for 50 N class and 70 R class steam locomotives, the accent is now on the powerful L class mainline electrics. Our picture shows one being unloaded from a Blue Star liner.

—(Reproduced by courtesy Melbourne "Age").

TECHNICAL NOTES

LONG WELDED RAILS

Insulated Joints

From a paper prepared by Mr. C. W. Clarke, Assistant Commissioner (Engineering), West Australian Government Railways.

(Reprinted from the W.A.G.R. Institute Magazine)

The provision of insulated joints for track circuits, when long-welded rails are used, needs special consideration.

The expansion of a 40ft. free rail per 10deg. F. rise in temperature is: (0.000006 x 10 x 40 x 12) inches, say 0.03in. per 10deg. F. rise.

For a temperature range of plus and minus 50deg. F. from mean temperature the rail length will vary plus and minus 0.15in. This means the expansion gap width must not be less than 5/16in. to avoid possibility of rails butting.

For a free rail 240ft. long, and for the same temperature range, the expansion gap width must not be less than 1-13/16in. In practice the rail can be restrained to some extent, but not fully. For a temperature range of plus and minus 50deg. F. the expansion gap range will vary, in practice, from about 5/8in. to 1¼in. (depending on degree of restraint due to rail fastenings), and fishplates with specially elongated holes must be used to allow for this range of expansion when installing long-welded rails.

For very long rails (and ribbon rails of infinite length), there exists a restrained middle portion. Only a specific length at each end, depending on the degree of restraint, changes in length. The lengths at each end which expands or contracts is that carried on about 85—160 sleepers. In practice, irrespective of length of long ribbon rails (rails over 850ft. in length), it can be taken that the expansion at each end is equivalent to about that of a free rail 85ft. long.

It is difficult to design an insulated joint to deal with this range of expansion. The end posts for insulation cannot be inserted in summer, and in winter the joints pull open up to ¾in., leaving a loose end post. The problem can be overcome by designing the insulated joint so that it does not provide for expansion.

There are two methods of so locating the insulated joint:

(a) Provide a short rail of about 15ft. 0in. to 20ft. 0in. in length at the end of a long-welded rail. The insulated joint is inserted between the short length and the long rail. The short rail length is not anchored and only the long-welded rail is anchored. The expansion joint is provided between the free end of the short rail and the next long-welded rail.
(Select the short rail length so that two can be cut from a standard rail).

(b) Make a rigid insulated joint between two 15ft. 0in. length of rails, and then insert the 30ft. 0in. length of rail between the two long-welded rail lengths. The 30ft. 0in. length of rail is not anchored, but fixed to the sleepers by dog-spikes or other fastenings normally employed. The long-welded rails are firmly anchored. Expansion joints are provided at each end of the 30ft. 0in. rail length.

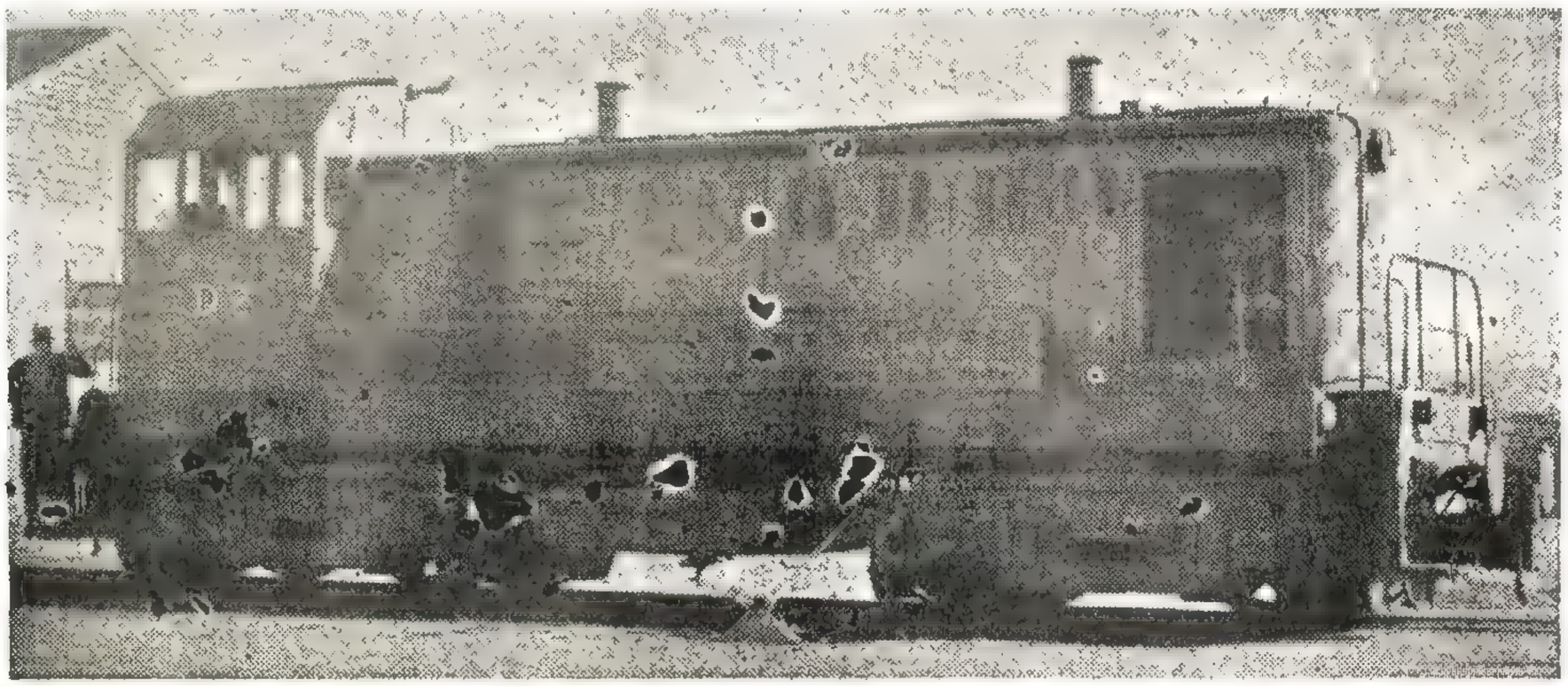
Method (b) is to be preferred, since the insulated joint can be made in the 'shops, and the 30ft. 0in. length of rail transported to site.

Most railways are now abandoning the use of steel fishplates with fibre insulated joints in favour of compressed laminated fibre fishplates. British Railways prefer the Permali or Jabro (Messrs. Airscrew and Jickwood Limited), compressed fibre laminated fishplate). Most of the Continental Railways adopt a similar product, such as the Complex or Durisal plate.

When fitting insulated joints, care should be taken to ensure rails are not hogged or dipped before installation and that they are a good match.

Since long-welded rails are always in tension or compression (because the rails are in thermal equilibrium over a narrow range), it is generally difficult to remove fishplates at expansion joints. The fishbolts often become jammed. In cold weather the rails are in tension and it may become necessary to cut the fishplates to free the fishbolts. In hot weather the rails are in compression and it may become necessary to cut the rail to relieve the bolts. In such cases there is a possibility of the saw blade jamming with the rail in compression.

In hot weather the rail tends to butt, and sometimes, when this happens the rail-ends become burred over at the top. In such cases thermal compression tends to produce eccentric loading and there exists real danger of upward buckling of the rail.



Australia's first heavy diesel electric locomotives were the D class B + B transfer locomotives used by Australian Iron & Steel Pty. Ltd., for coal haulage to and from the steelworks at Port Kembla, N.S.W. Our illustration shows D2 of this class, full details of which were given in our issue of January, 1951.

—(Illustration by courtesy "B.H.P. Review").

With long-welded rails, the rail joints must receive extra attention and be inspected regularly. As the expansion gap for rails about 240ft. long must be much greater than that provided for rails 40ft. long, the impact at joints will be greater, and unless maintained in good condition, end batter and hogging of rail-ends will result.

Some Notes On Diesel Electric Locomotives

By Evan Taylor, B.E.

(Instructor in Diesel Locomotive Operation, Clyde Engineering Co. Pty. Ltd.)

[Adapted from "The Locomotive Journal"]

During the past few years the concept of diesel electric locomotives operating on Australian railway systems has become more and more a reality. Some people still doubt their ability to do a job of work. They know that for many years steam has done the job well, as no other form of power could have done it. They can tell by looking at it that a steam locomotive of a certain size is capable of handling a fast, heavy train; they can see the side rods, feel the beat of each piston stroke, hear the blowoff when the boiler pressure comes up to its maximum.

Such people are sceptical of the ability of a diesel electric locomotive because none of these signs of power, one of these yardsticks, is visible. When they look at a typical 1,500 h.p. diesel, it is only about half the weight and three-quarters the length of a typical Mikado steam locomotive, yet it has the abilty to exert considerably higher tractive effort, and to run at far higher speed.

A diesel electric locomotive is composed of numerous individual components which are assembled into one car-body structure and operated under the direction of one man. Nearly all operations and controls are automatic, so that the responsibility of the driver for efficient operation is reduced to the minimum, and all his energies may be directed to observing the road. The typical diesel electric train locomotive has the usual two brake handles for automatic and independent brake, as on a steam locomotive; it also has a lever to select either forward or reverse direction of running, and another lever usually called the "throttle" which controls the amount of power the engine will develop for moving the locomotive. It is similar in function to the regulator on a steam locomotive but, strictly speaking, it is neither a throttle nor a regulator, for it does not throttle or restrict the fuel going into the engine, nor does it regulate the release of a small proportion of the available steam pressure of a boiler. Its action is to adjust the engine governor so that the engine will run at a certain selected speed—any one of the eight speeds from "idle" at 275 r.p.m. to full speed at 800 r.p.m. Let us look at the action of the governor from the driver's viewpoint, that is as a device that translates the position of the throttle lever into a certain engine speed and, hence, a certain engine horsepower output.

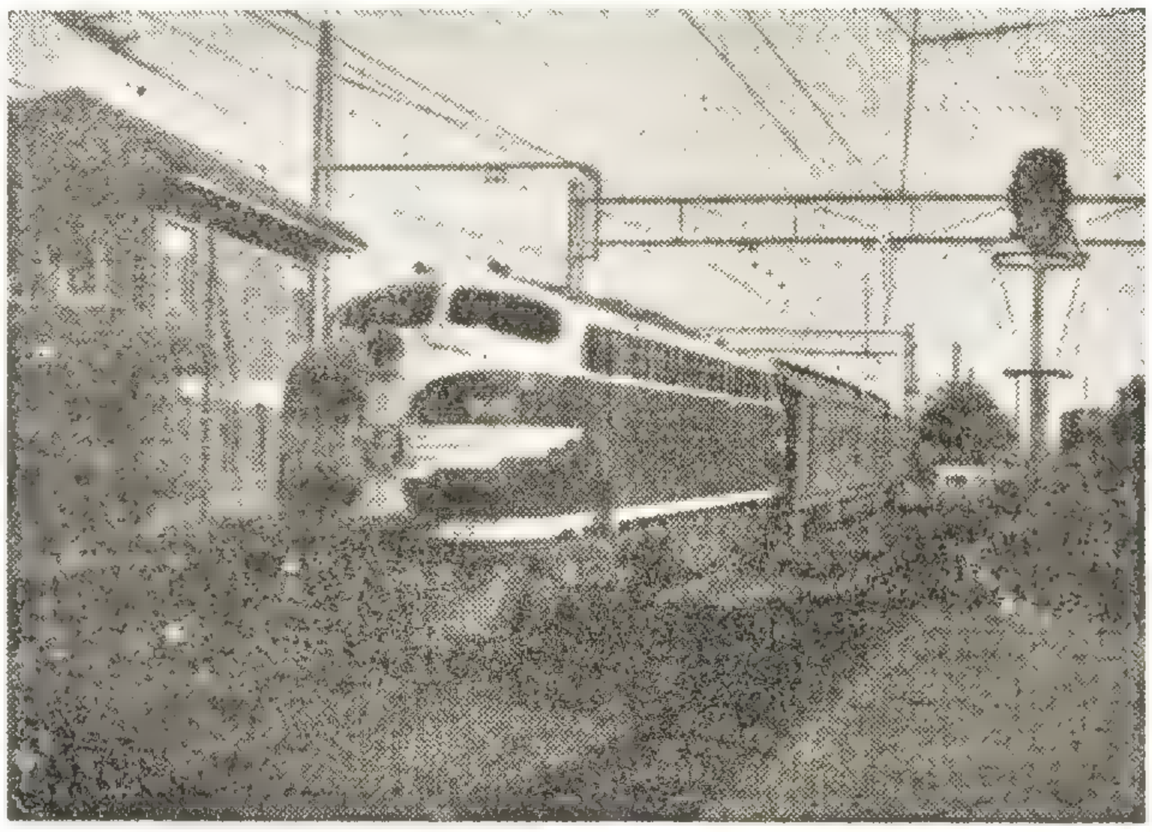
Between the brake pedestal at his left hand and the controller with its reverser and throttle lever by his right hand, the driver has in front of him a dash board carrying his brake gauges, a load meter (or ampere meter) that indicates the pulling power of the locomotive, and various switches and indicator lights.

These are all the controls he is required to handle while the locomotive is in service, and he can reach them all easily and comfortably from his seat. Ahead of him he has a wide, clear view of the track at all times, restricted only by the curves and cuttings of the road itself. The "fireman" likewise has his comfortably padded seat, from which through the wide windscreen he has an equally clear view of the track.

The crew is accommodated in a cab at the leading end of the locomotive, where there is all the comfort and protection of a modern sedan car. The rear wall of the cab consists of the main electrical control cabinet flanked on either side by doors leading into the engine room. In this control cabinet are housed the contactors and relays that distribute and regulate the electricity that has been produced by the main generator, and delivered to the traction motors.

Beyond the control cabinet in the centre of the locomotive is the power unit, consisting of a diesel engine, which is directly coupled to a generator and air compressor. At the far end of the locomotive the arrangement differs, depending on the requirements of the service to which the locomotive will be put. For locomotives that are operated where convenient turning facilities exist it is reasonable to simplify the design, and build a locomotive that will run normally in one direction. with a driver's cab at one end. However, if it is desirable to turn a locomotive with the minimum of delay, or if turning facilities are not readily available, it is convenient to have a cab at each end, so that the locomotive may be driven in either direction with equal ease.

Examples of the single-ended type are the Clyde-G.M. locomotives in service with the Commonwealth Railways. When required, these units may be coupled together to form a locomotive of twice the power, in which case the cabs are at each end of the locomotive, and it does not require turning. The Clyde-G.M. main-line diesel locomotives that are in service in Victoria are double ended units, which, though they may be coupled in groups for higher horse-power outputs, too, do not need to be turned at terminals.



Reader G. Watsford snapped this interesting view of the Down Bairnsdale passenger train leaving Caulfie'd, Vic., last Easter. The locomotive is B class diesel No. . Caulfield, an important suburban station for Melbourne commuters, is the junction point for the Frankston and Gippsland lines, and the end of the four-track section from South Yarra.

In single-ended locomotives the rear end of the car body generally houses batteries, engine-cooling equipment, and toilet facilities. With the Victorian locomotives, beyond the power unit and its cooling equipment, is a second electrical cabinet. which forms a partition between the engine room and the rear cab. This rear cab is in all respects the same as the one at the other end of the locomotive.

Bogie Changing On Diesel Electric Locomotives

By H. J. Wright

Whilst at Enfield Depot several months ago I had the privilege of watching the operation of a set of bogies being changed on one of our Diesel Electric Locomotives at the Chullora Shops. The locomotive on this occasion was 4006. worked light engine from Enfield Loco to Chullora Shops.

Immediately upon our arrival at 2.15 p.m fitters set to work disconnecting the electric leads to the bogie and also the sanding pipes. This occupied but a few minutes and when completed the hardest task began, that of removing the holding pin which, as it suggests, holds the bogie pivot claws in place. These claws take the place of a king-pin as used on the leading bogie of a steam locomotive.

These preliminary necessities were completed in 40 minutes, and at 2.55 p.m. the overhead travelling crane with 60-ton hoists at both ends, began lifting the diesel electric locomotive, including the trailing bogie. Once it was at a sufficient height, the disconnected bogie was wheeled away and the new bogie moved into place. At this time the crane began lowering 4006 onto the new bogie, and both bogies were taking the full engine weight again within 18 minutes from the beginning of the lift.

The fitters then began the task of re-connecting the bogie pivot claws, electric cable leads and sanding gear. As will be readily realised this took up more time than in disconnecting them as all items require adjusting and checking.

While this was being done, I was also privileged to watch the removed bogie being dismantled in the adjoining shop. The bogie is completely stripped, cleaned, tested and checked and in a matter of several days is ready to be changed onto another diesel-electric loco. As the Department only possesses one spare bogie for its 20 Alco's it is essential that no time be lost in the dismantling and examination but, even so, nothing is overlooked in these very efficient shops. I understand that these bogies are changed and inspected every 120,000 miles, or as near to that mileage as is possible with the one spare.

Some 2½ hours were required to complete the fitting, adjustment and checking of the newly-fitted bogie, after which the diesel motor was started and the locomotive given a short test within the shop, and following a final check-over by a very competent diesel mechanic, returned light engine to Enfield Depot, where 4006 was serviced for its next turn of duty.

CLUB NOTICE BOARD

This column is available free of charge to Railway, Tramway, Engineering and Model organisations. Alterations are made at quarterly intervals. Notices should be as brief as possible.

ADELAIDE MODEL RAILROADERS: Alternate Tuesdays, 8 p.m. (C. P. McLachlan, 97 Hall Street, Semaphore, S.A.)

AUSTRALIAN ELECTRIC TRACTION ASSOCIATION: Melbourne — 3rd Friday, V.R. Institute, 8 p.m. (W. C. Mercer, 18 Embling Road, Malvern, S.E.4, Vic.); Sydney — 3rd Thursday, Railway Institute, Devonshire Street, 8 p.m. (R. Young, Box 2266, G.P.O., Sydney, N.S.W.).

AUSTRALIAN MODEL RAILWAY ASSOCIATION: Victorian Branch — 4th Friday, St. Mark's, George Street, Fitzroy. (Federal Secretary — T. Dunlop, 105 Blake Street, Reservoir, Vic.)

AUSTRALIAN RAILWAY HISTORICAL SOCIETY: Sydney — 2nd Tuesday, Railway Institute, Devonshire Street, 8 p.m. (H. I. McDonald, 3a Oxford Street, Burwood, N.S.W.); Melbourne — 4th Thursday, V.R. Institute, 8 p.m. (R. T. Sloggett, 12 Ayr Street, Blackburn, Vic.); Adelaide — 4th Wednesday, S.A.S.M.E.E. Rooms, Millswood (B. I. Castle, 17 Cecilia Street, Brighton, S.A.)

BRISBANE MODEL RAILWAY CLUB: 1st and 3rd Thursday, 36 Goulburn Street, Kedron, 8 p.m. (C. Harrison, 110 Haig Street, Stafford, N.3)

NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area): 22 Whish Street, Windsor, Qld.)

NORTHERN SUBURBS MODEL RAILWAY ASSOCIATION: 2nd Thursday, Presbyterian Hall, Artarmon, 8 p.m. (A. W. Perry, 126 Hampden Road, Artarmon, N.S.W.)

QUEENSLAND SOCIETY OF MODEL ENGINEERS: 4th Monday, 8 p.m. (C. H. Garner, "Elsinor", Gray's Road, Gaythorne, Qld.)

S.A. SOCIETY OF MODEL & EXPERIMENTAL ENGINEERS: 2nd Tuesday, "Sasmee Park", Millswood Crescent, Millswood, 8 p.m. (V. H. Messer, 43 Denning Street, Unley, S.A.)

SYDNEY MODEL RAILWAY SOCIETY: Mondays, 273 Castlereagh Street (4th Floor), 8 p.m. (R. Brewer, 40 Leura Road, Auburn, N.S.W.).

SYDNEY SOCIETY OF MODEL ENGINEERS: Last Saturday, 190 Parramatta Road, Ashfield, 8 p.m. (R.B. Thomson, 5 Annie Street, Hurstville, N.S.W.)

TASMANIAN RAILWAY & MODEL RAILWAY SOCIETY: Hobart — (K. Andrews, 386 Park Street, Hobart); Launceston — (K. Flood, 146 Wellington Street, Launceston)

VICTORIAN MODEL RAILWAY SOCIETY: 3rd Wednesday, Auburn Railway Station, 8 p.m. (J. Hooker, 1 Shaftesbury Avenue, Malvern, S.E.4, Vic.)

W.A. MODEL ENGINEERING SOCIETY: 1st and 3rd Wednesday, Railway Institute, 8 p.m. (I. Norman, 54 Woodsome Street, Mt. Lawley, W.A.).

FREE COLOUR PICTURES
New Erie R.R. Set

Once again the Erie Railroad offers a set of postcards in full colour to Australian railfans. The latest additions to this series comprise two cards, one of which depicts a striking scene at the Upper Falls on the Genesee River with the 235ft. high Portage Viaduct in the background; the other card shows four big diesel-electric locomotives outside the shops at Hornell, N.Y.

As with the previous set, all you have to do is send a self-addressed envelope and an International Reply Coupon (obtainable at any post office) to Mr. A. G. Oldenquist, Passenger Traffic Manager, Erie Railroad, Midland Building, Cleveland 15, Ohio, U.S.A., mentioning this journal.

ANSWERS TO CORRESPONDENTS

A. C. KURTZER, Parkside, S.A. — Have sent issues in short supply. Others mentioned are still in stock. Please note postal notes should be payable at Melbourne

G. WATSFORD, East Malvern, Vic. — Copy sent. Thanks for pix — see elsewhere this issue. Budget won't run to illustrations of accidents

J. STORMONT, Harden, N.S.W. — Thanks. See correction last issue

M. DIXON, East Maitland, N.S.W. — Position since explained; hope you received issues O.K.

W. Moore, Childers, Qld. — See answer to Mr. Dixon. Thanks for comments

W. A. LILLIA, Semaphore South, S.A. — Much appreciated, thanks

Model Railways

STEAM — CLOCKWORK — ELECTRIC
ALL GAUGES
Edited by David Gross

Editorial

What the other fellow does and how he does it is the subject of most interest to all of us outside of what we are doing ourselves.

Has your layout been written up in Railways in Australia. If not, now is the time to get to work and make you and your doings known, by letting us publish a brief history of your railway, together with photographs and items of interest. Also tell us when you like visitors to arrive. In short, advertise your railway, and become known. There are no requirements as to literary standard; we can do the trimming; but we do want to have all the facts; the trials and triumphs; so don't hesitate; write to us now.

DAVID GROSS,
Models Editor.

Realistic Main Line

Even the flattest and straightest main line looks different when seen from an engine cab. The long, flat straightways roll gently up and down and there are sudden dips and rises where crossings have changed the grade.

The model railway can stand more curvature and grade than any real railway, yet all too often layouts consist of only those curves and grades which are absolutely necessary. The straight track down the side of a wall is unbroken by curve or dip and therefore lacks a great degree of interest and realism. The modeller should try to imitate typical alignment and appearance and not a perfectly straight and flat railway.

The topography must be planned to make the track look natural therefore an extra bit of time spent on planning will pay dividends in the long run as the track is one of the most permanent parts of your hobby and should be as neat a job as any of your valued pieces of rolling stock.

CONSTRUCTION HINTS

Tracks too dry

If your locos are erratic and bad starters, and seem to receive only intermittent bursts of current, your trouble may be due to the track being dry. I found that, to apply some light oil to the track, with a cloth, eliminates bad running and pitted driving wheels, yet makes no noticeable difference to the pulling characteristics of my locos.

R. A. SIDDALL.

Handy Clamps

Ordinary sprung clothes pegs make very handy clamps for soldering. Trim away the excess wood which forms the front Vee so that the soldering bit can be held close to the work held. The advantage of these clamps is that, being of wood, they do not conduct heat away from the job.

R. MENNIE.

Clean Wheels

This is actually an operating hint rather than a construction hint but it is of interest to the H.O. boys in particular. Having many derailments? Yet your track is in gauge, well have a look at the tyres of your rolling stock. A mixture of dust, dirt and oil on the track can be picked up by the wheels and eventually be thick enough to cause the flanges to be ineffective. The hint is to inspect your wheels regularly, and to scrape off any such formation, from the tyres, with a small screw driver. This makes quite a difference to the operating reliability of your railway.

R. COLWELL.

QUESTION BOX

Q. Is or isn't H.O. Gauge just half "O" gauge, and if not, why not?

A. H.O. gauge is slightly more than half "O" gauge. The gauge is 16.5 mm, which should never be measured in fractions of inches because then it won't come out quite so accurately.

The metric system is used for all H.O. measurements, either scale or gauge. H.O. started in England, where "O" gauge is 1¼ in. track but 7 mm. scale, about 3.6 per cent. too big for the gauge. When the 3.5 mm. scale started. it was half of "O" gauge scale, hence called half O, but the gauge was corrected at the same time to 100 per cent. accuracy — the full size being 4ft. 8½in. This necessitated its being more than just $\frac{5}{8}$in. gauge.

ORGANISE A LAYOUT COMPETITION

These days, clubs are doing much to encourage a model building, by running model competitions. In general, these competitions are a great boost to the hobby, as they encourage the new and old to be active and better craftsmen. Unfortunately, however, they tend to favour the fellows who do not have a lavout to attend to, in as much as they can devote all their time to the construction of super detailed models, whereas the other fellow has to spend much time in building or maintenance of his layout.

In order to contribute to the advancement on another major part of our hobby, we bring to your notice the idea of a layout competition. This could be an annual event, and could be judged by the degree of progress of a layout. the detailed work in track laying, the scenery and lineside structures and the operating reliability of a layout.

We would like to hear your views on this matter, and to publish the suggestions offered so as to assist club secretaries in arranging such competitions.

MODELLERS & CLUBS IN THE NEWS

David Bennett, a member of AMRA & NMRA, and owner of Union Short Line, has now embarked on a career of manufacturing in H.O. gauge. He apparently has been receiving expert advise from Bill Lowry, and contemplates making a few V.R. castings in the near future.

Ford Niquet took the honours at the VMRS, Z van competition. His model was interior furnished and decorated, and a true replica of its prototype.

Alan Goode (A.R.) also had a Z van in the competition. It was just one, of the nine he built en masse.

Those notorious V.R.I. wagons, of Mayer Levy, have done the trick again, for Mayer received the prize for the best home built models on display at a recent AMRA meeting. Besides his modelling, Mayer is kept

busy in his capacity of AMRA Treasurer, and he also enjoys membership of VMRS. He may give us an article, on how he builds his models, in the not too distant future.

WHAT GOES ON IN "TASSIE"—from Peter Mottram

Some months ago The Tasmanian Railway & Model Railway Club was formed. It is the outcome of an idea of Messrs. Bruce Rayner, Kevin Andrews and myself. Originally Bruce and I were working on an idea for a Model Railway Club, but did not get very far. After contacting Kevin on a railway matter and idly mentioning my idea, he and I got together on the idea of the combined club. The three of us then went into a huddle, collected lists of names from anyone who may know a starter for us, spent pounds on stationery and postage, and the club was formed. The following officers were elected at a subsequent meeting: President and Chairman, P. Mottram; Vice-President, B. Rayner; Secretary, K. Andrews; Treasurer, W. Bell; Liaison Officers, model, R. Rayner; prototype, C. Hey. At the moment the club funds stand at 2/1½. We are working on members' donations, to be subtracted from membership fees once these are defined and when our constitution is complete.

Recently the three "founders" went to Launceston to attend the original meeting of our branch. During this visit, our northern back-stay, Mr. Ken Flood, was temporarily elected chairman, secretary and treasurer without funds. After a couple more meetings, and more members are "enrolled", an official election will be held, so that Ken can be relieved of part of his duties.

Our theories cover such things as visits to others' layouts, construction of our own models, visits to yards and sheds, arranging trips for under privileged children, and going for rail trips in our own coach (which is only in the "idea" stage). The idea is, we buy an old coach, BT or BBT, in good order, fit up our own model and club rooms in it, and hitch on to a goods train when we want to go somewhere. All dreams at present, but with our patron, the general manager of Railways, behind us, we may be successful, so here's hoping.

(Any Tasmanian Modellers wanting to contact Peter should write to: 22 Pine Street, West Hobart, Tasmania.—Ed.)

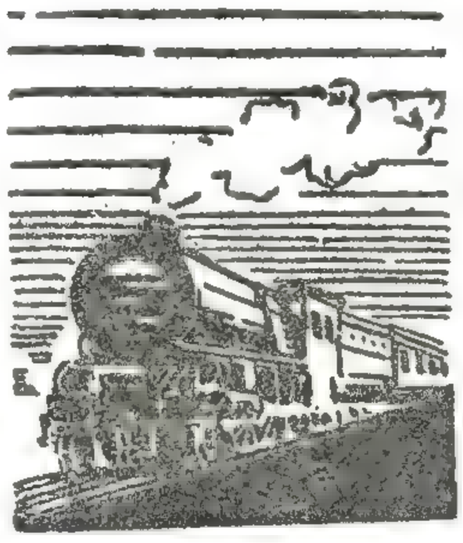
MORE EXHIBITIONS, PLEASE!

A reader, from Parkville, Vic., writes:

". . . why do the clubs wait so long for putting on an exhibition? What about having one each year? Couldn't they all get together and rent a hall and have an exhibition, say from 7 or 8 till 10 p.m. on a Friday night, and from 10 or 11 a.m. until 10 p.m. on the Saturday?"

(It's good to know that an exhibition into which so much time and effort was put was so well liked, but it's not a thing that can be done often. Most of the stands were manned by chaps who sacrificed their annual leave, or who got "time off" from their jobs, without pay. As most of them are married, and have families, they can't do this often. The preparatory work occupied the whole of several chaps' spare time for up to three weeks, and the Secretary had to obtain six months' leave of absence to organize the exhibition and clear up all the paper work afterwards.

There will be another exhibition in 1956 (to coincide with the Olympics) and there may be a smaller one next year.—Ed.)



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ADVANCE, AUSTRALIA FAIR!

From this month's correspondence;

". . . When I finally settle for the layout I hope to have, I am thinking of calling it the Wattle Valley Railway Co. It will be original, and Australian — none of the eternal 'Something, Somewhere & Pacific Railway'."

GO-AHEAD TASMANIAN CLUB
Northern Branch Formed

The Tasmanian Railway and Model Railway Club, the Hobart branch of which was established only recently, has now formed a branch at Launceston.

The president is Mr. P. Larissey, the secretary is Mr. K. Flood, and other office-bearers are: Messrs. Guy, J. Shennan, C. Ward, and W. Sutherland.

MORE ABOUT LAYOUT PROBLEMS

Next month we print the second of Mr. Trevor Hosking's helpful articles on layout design.

Diagrams are included, showing station layouts taken from full-size rail roading.

Our Model Editor's address is:

Mr. David Gross,
13 North Street,
Sandringham, S.8, Vic.

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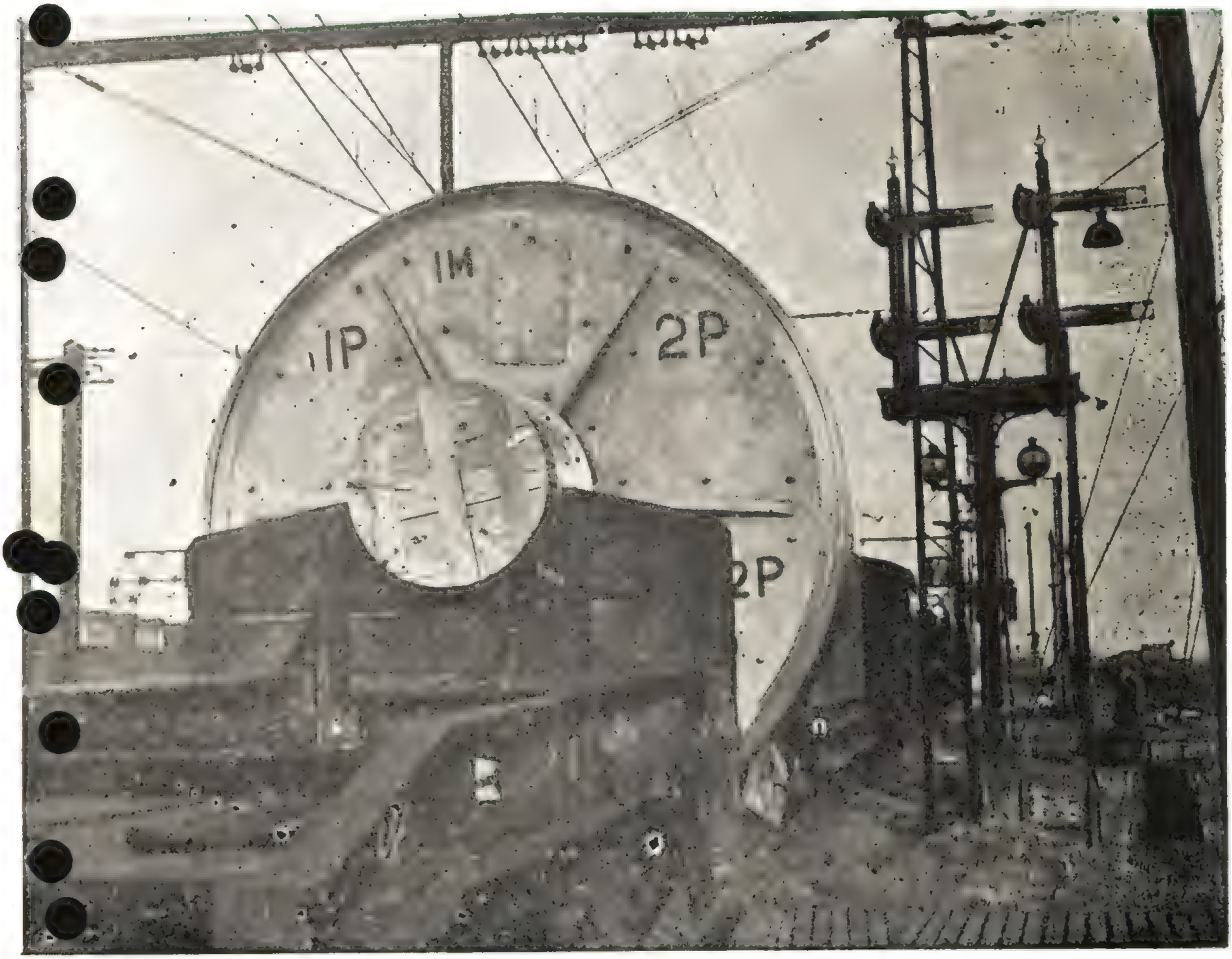

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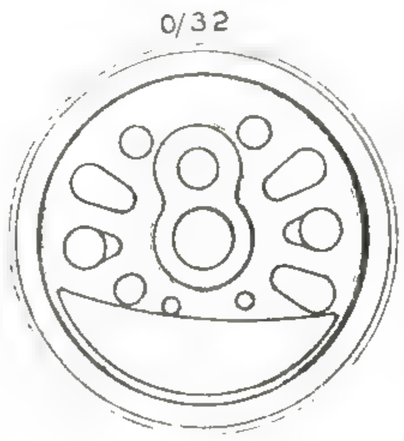

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ALTHOUGH DATED JULY-AUGUST, 1953, TO PRESERVE CONTINUITY,, THIS ISSUE WAS ACTUALLY PUBLISHED IN DECEMBER.

IT IS HOPED TO HAVE ANOTHER ISSUE OUT BY THE END OF THE YEAR.

OUR COVER PICTURE

This month's cover illustration, reproduced by courtesy of the Victorian Railways, shows an out-of-gauge load transported to Gippsland recently. Elaborate precautions were taken to prevent fouling.

OBITUARY

The Late Mr. P. C. Raynor

We record with regret the death, on 15th October, of Mr. P. C. Raynor, Assistant Commissioner, West Australian Government Railways. Mr. Raynor, who joined the service as a clerical cadet in July, 1911, became the first Assistant Commissioner to be appointed under the new Railway Act in 1949. In addition to his duties in the Department, Mr. Raynor served as departmental advocate on the 1947-48 Royal Commission on Railways, as W.A.G.R. representative on the A.S.G. locomotive enquiry and in the Coal Price Arbitration Proceedings. He was a foundation member of the W.A. branch of the Transport Officers' Federation and, from 1942, was a member of the W.A. Coal Commission. He was well known in other states, having travelled extensively in connection with conferences on railway matters.

THE JUST PRICE

(Reprinted from W.A.G.R. Institute Magazine)

We have heard plenty in the past few years about the drift in railway finance — considerably more than we have heard about our restraint in passing on increased costs to the consumer. Now that some effort is being made to achieve a just price, designed to give good service to the customer and at the same time to place our railways on an economic basis, it should be the policy of the staff to arm themselves with some good talking points with which to combat any protests which may proceed from those who have previously enjoyed the benefit of our depressed prices.

Seven hundred years ago the Christian world was very concerned about establishing a Just Price, and also a Just Wage, as part of their creed of justice in all relations between members of the human race. But in those days the Church held a powerful sway over the peoples, and thus were able to back their doctrines with a certain amount of intimidation.

Unfortunately, controls, however idealistic in their conception, are irksome in their application, and the Just Price of the Middle Ages became obscured in the haziness of its modifications, adaptations, and variations to suit the exigencies of particular situations. Clever people were not slow to exploit the numerous loopholes for the prosecution of their personal gain. And it is a sad fact of history that controllers are seldom infallible exponents of the Christian creed of impartiality. Freedom on the other hand has a basic appeal to the individual. It incites the competitive spirit which is one of the zests of living. But of course it leaves the field open for the quick-witted and unscrupulous. Hence the world has continuously oscillated between the two economic poles.

Today the Basic Wage is the fundamental factor of the price index. It is the modern conception of the Just Wage, and is the portion of our economy which is subject to control. Price, however, is comparatively free to find its own level, as an expression of the consent of both consumer and seller. We find that the fluid price has most consistently followed the controlled wage. Since 1939 the increase in the Basic Wage has been around 200 per cent, i.e., from £4 to £12 in even figures. But the things we all buy have also risen by 200 per cent. Shirts which cost 12/6 in 1939 now cost £2; bread has risen from 4d. to 1/1; one shilling would buy a pound of meat that now costs 3/6; in the dreamy past we could enjoy oblivion for a halfpenny an ounce —now at 1¼d. an ounce we seldom lose our wits; the house that cost us £1 per week in pre-war days would now be hard to secure at three.

Railway costs have been no exception to this manifold increase. As well as the three-fold basic wage, materials have also risen by at least an equal amount. Coal in 1939 cost 14/1.9 per ton, in 1951 31/9, and today 68/-; sleepers per load were 85/-, now they are 381/-; rails per ton in 1939 were £10/10/- a ton, last June they averaged £32.

(Continued Overleaf)

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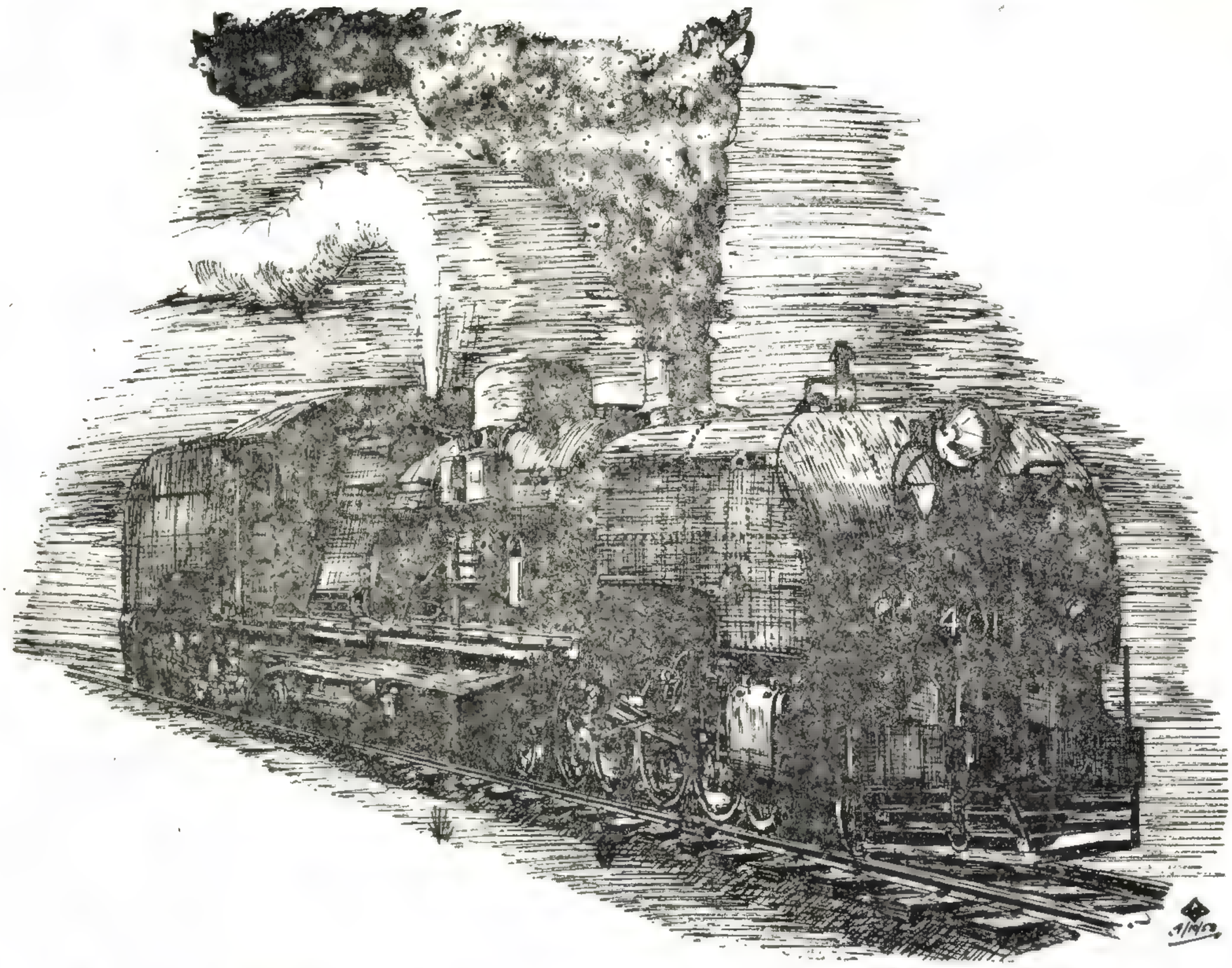


Railway Round-up

News from Australian Railways

Edited by Lloyd Holmes

Contributions Invited

VICTORIAN RAILWAYS

Change for "S.O.P."

Probably the heaviest passenger car ever to run on Australian rails, the V.R. air-conditioned dining car "Avoca" (75 tons) has been painted blue with gold lines for use on the "Spirit of Progress". The regular S.O.P. diner has been withdrawn for use on the Royal Train early next year.

Improved Passenger Cars

Several of the cars used in "Overland" service between Adelaide and Melbourne are riding on new bogies of a type used extensively on streamliners in the U.S.A. Known as the Commonwealth type equalised cast steel bogie, this type is claimed, by virtue of its wide spring formation, to reduce car roll considerably at high speed, as well as lessening jolting from track irregularities. It is likely that the remaining cars used on the "Overland" will receive similar bogies, there having been some criticism of their riding qualities, particularly between Ararat, Vic., and Tailem Bend, S.A., where light rail prevails and track standards are not as high as elsewhere between the two capitals.

NEW EQUIPMENT

Six new 60-ft. turntables are on their way to Victoria from England. Electrically-operated, and of modern design, they will replace old units at Seymour, Benalla, Geelong, Maryborough, Ballarat and Bendigo.

Constantly seeking ways of improving travel comfort, the Victorian Railways are conducting trails of a new-type bogie on one of their S-class, all-steel, air-conditioned cars. In place of the two sets of elliptical springs on the modern, Timken-equipped bogies, the experimental bogies have large coil springs on each side of which are connected large shock-absorbers fitted outside the bogie frame.

THE JUST PRICE

(Continued from previous page)

But whereas from the preceding lists of commodity prices it is apparent that industry generally has been able to transfer the rising basic wage to the selling price, an analysis of railway charges shows that our customers have enjoyed a fair measure of protection from the full burden of inflated costs. Our earnings in 1939 averaged 1.71d. per ton mile; as late as the current year the increase was only 100 per cent to 3.44d. per ton mile; and even our latest effort, many years overdue, to harmonise our prices with the general level, is not expected to result in an increase of more than 175 per cent over the past fifteen years. This still leaves us with a benevolent margin below the 200 per cent increase since 1939 which now applies almost universally to the trading world.

N.S.W. RAILWAYS

LOCOMOTIVE NOTES

The first of the 41-class diesel electric switchers, [illegible] of which are on order from England, has been [illegible]ed at Sydney. These engines are also intended for light road service and are of the B + B type.

Twenty-five 60-class 4-8-4 + 4-8-4 Beyer Garratts are in service, but it is believed that the N.S.W.R. wish to cancel the remainder of the order, which originally called for 50 of these huge machines.

[illegible]e "Pigs" (by which name the 36-class 4-6-0's are k[illegible]n to enginemen) have a new look. No. 3643 of this class has emerged from Chullora workshops with a new cab and Belpaire firebox, along with a new boiler. The latter lacks the hump-back typical of these [illegible]motives. Re-boilering has increased the tractive [illegible] from 31,400 lb. to 33,900 lb. The whole of this hard-working class, 75 in all, is to be reboilered and re[illegible]bbed.

Rolling Stock Developments

Following some months' trial with two former BCH coal hoppers, the N.S.W.R. will convert 350 of the 2,750 BCH cars to BWH bulk wheat cars. The BWH cars have a roof with three loading hatches each side of a centre catwalk, which extends the length of the ca[illegible] Load capacity is 41 tons.

[illegible]enty FME flat cars (45 ft.) fitted for transport of LCL freight containers are now in service for inter-[illegible]e fast freight. They have a low steel frame on their deck into which six LCL containers fit snugly and securely without having to be lashed. As with other new freight rolling stock on the N.S.W.R., the FME cars have high-speed bogies to allow the "fast" in Fast Freight to become a reality.

S.A. RAILWAYS

NEW LOCOMOTIVE POWER

On September 28, the last of the order for ten 740-class Mikados (some prefer "Macarthurs") commenced the final stage of its journey from Sydney, leaving Melbourne for Adelaide, dismantled on flatcars. Built in Sydney by Clyde Engineering Co., No. 749 will bring the total number of "Mikes" on the S.A.R. to forty.

Last June saw the delivery of the first five of the ten 400-class 4-8-2 + 2-8-4 Beyer Garratts on order from the British firm of Beyer Peacock & Co. These 149-tonners represent Australia's largest and most powerful narrow (3 ft. 6 in.) gauge power, with a tractive effort of 43,520 lb. Their nearest rivals are the 1000-class Garratts of the same wheel arrangement in service on the Queensland Railways. The latter have a tractive effort of 32,770 lb. and weigh 137 tons. Cylinders of the 400-class measure 16 in. x 24 in. and the driving wheels are 4-ft. diameter. Fitted to burn oil, these engines are allotted to the Peterborough division and will haul ore tonnage between Cockburn (transfer point from the Silverton Tramway Co.) and Port Pirie, as well as coal from Telford (near Leigh Creek) to Terowie. Timken roller bearings are provided on all axles, and Walschaert's valve motion actuates

(Continued on page 14)

THIRD ANNUAL HOBBY SHOP "MYSTERY TRAIN TRIP"

Adelaide Rail Tour

[illegible]e 1953 "Hobby Shop Special" train operated as u[illegible]al on the Labor Day holiday, Monday, October 12. Thi[illegible]ear a departure was made from the usual ancient ste[illegible] locomotive and old-style carriages and the train was hauled by one of the latest S.A. Railways diesel-electric locomotives, of the 900-class.

No. 901 was used and ten coaches, the full haulage to within a couple of tons, was utilised. Eight coaches were originally allocated, including four modern steel ca[illegible]and this was increased, due to ticket sales, to nin[illegible]on the Saturday. Thirty minutes before departure another coach was added owing to the holiday-makers awaiting tickets.

The train, vividly decorated with streamers, left Adelaide Railway Station at 1.50 p.m. The destination, Bridgewater (23 miles through the Adelaide Hills) was reached at 3 p.m., six minutes behind schedule. Heavy grades are encountered on this section.

A 50-minute sojourn was enjoyed by all and many wildflowers were gathered. For the boys and girls a treasure hunt was organised. Among the 40-odd prizes were two special awards of permission to travel in the cab of the diesel from Mitcham to Adelaide.

The train departed at 3.50 p.m., stopping on the return at Mitcham and Goodwood, arriving back in Adelaide on schedule at 4.50 p.m.

It is estimated that over 700 travelled on this year's trip, it being the longest train yet used.

The proprietor of the "Hobby Shop", Mr. Eustis, is to be commended for his enterprise in arranging these annual outings. Unique in Australia, they

VALLEY HEIGHTS

A picture-story of the locomotive depot at the foot of Australia's steepest main-line grades.

By H. J. Wright

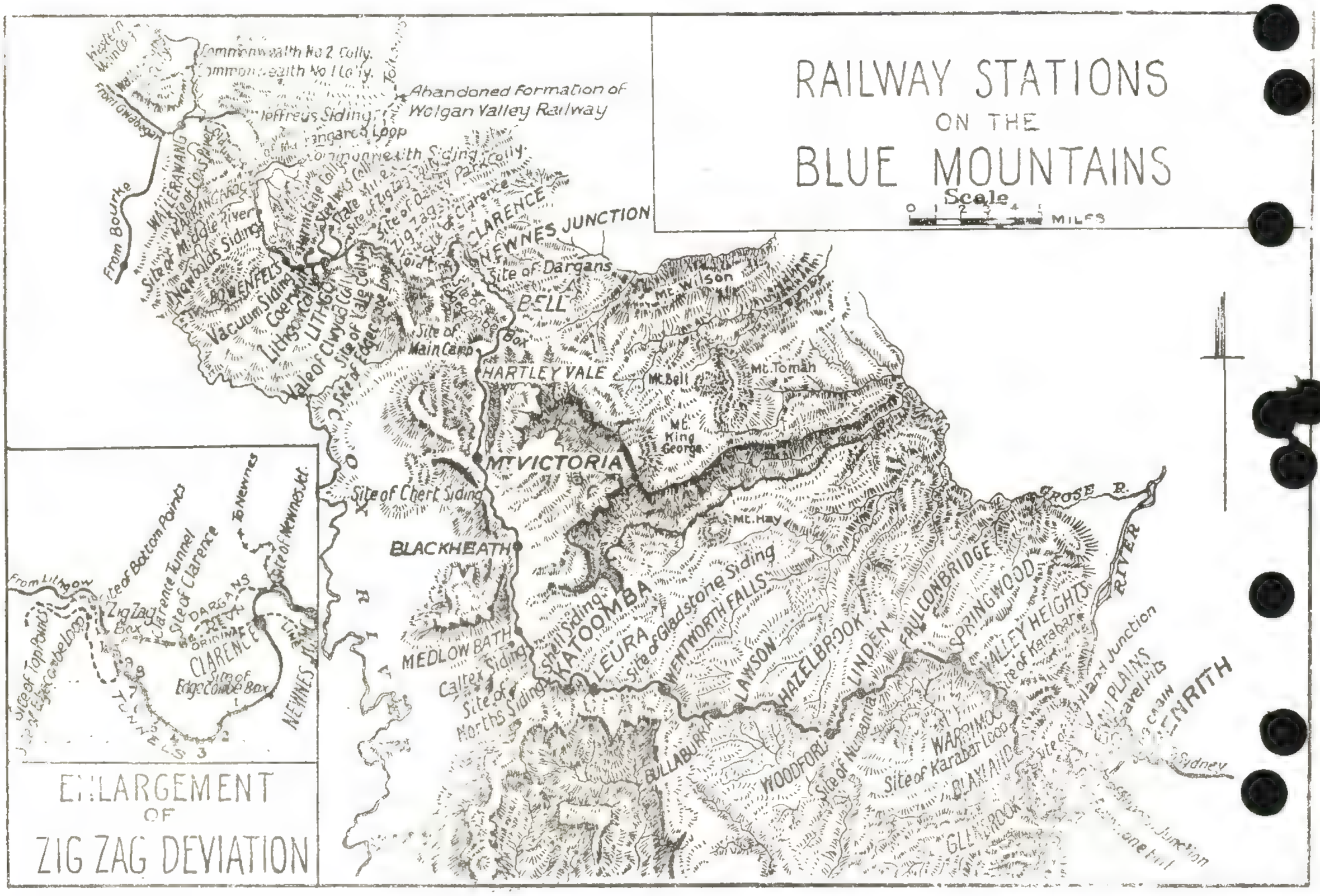
Map and diagrams by C. C. Singleton.

All illustrations by the author.

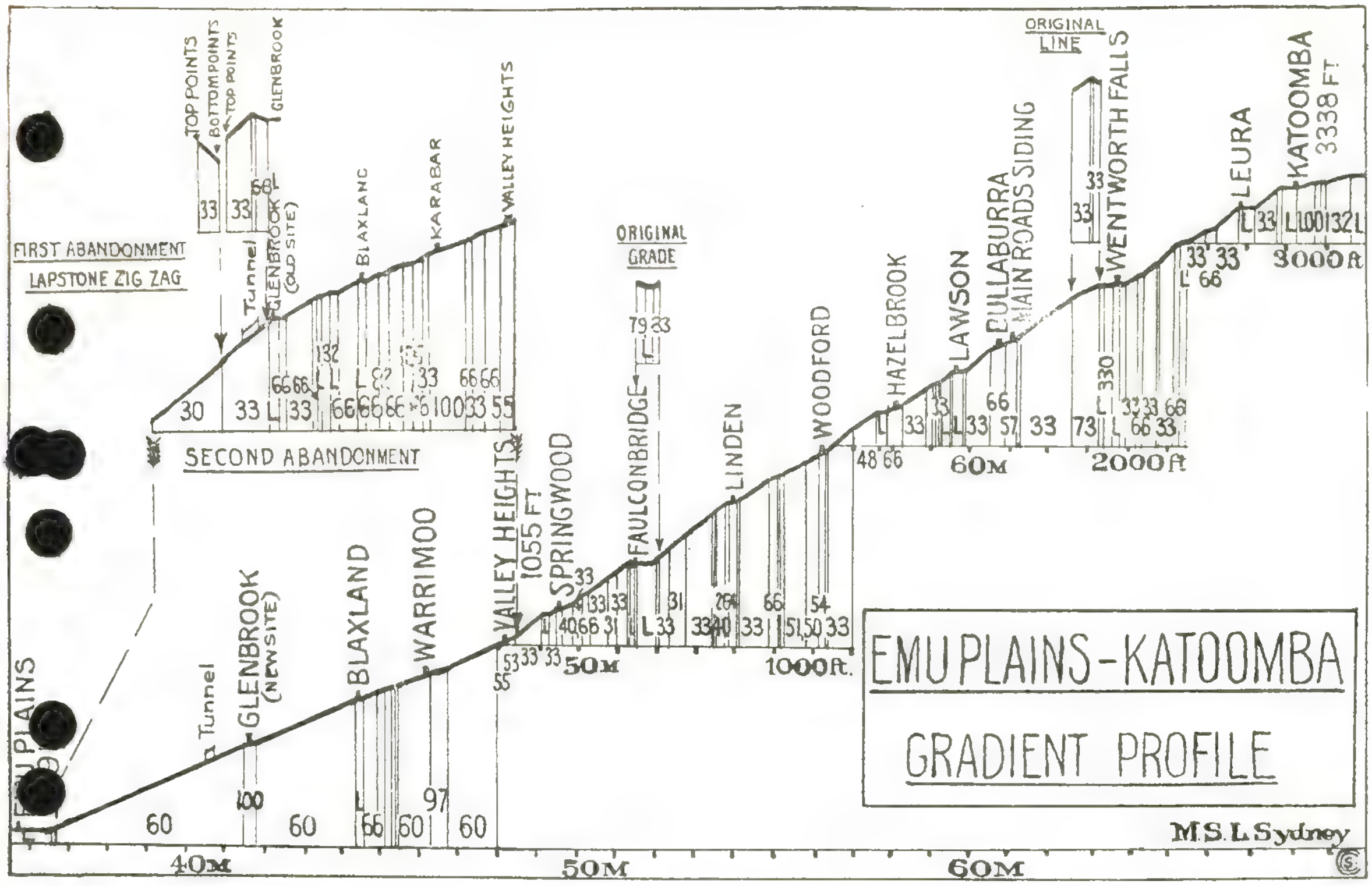
Valley Heights Locomotive Depot is one of the few locomotive depots in New South Wales which is almost exclusively for the servicing and operation of pilot engines. Certainly it is the largest pilot depot within this vast State, and also has the distinction of operating pilots over the most steeply graded adhesive traction main line in Australasia.

The town of Valley Heights has a population of less than 1,000, and is situated at a height of 1,056 feet above sea level, 48 miles 8 chains west of Sydney, on the Main Western Line. It is at the foot of the 1 in 31 and 1 in 33 grades encountered on the ascent of the world-famous Blue Mountains.

Looking east from the coaling stage. A D53-class 2-8-0 pilot engine has just backed on to the [illegible]6 heading a Down (westbound) passenger train standing at the island platform. Tracks in the foreground lead to the Loco Depot, while at right is a new fill apparently built up from dumped ashes.



This map of the Blue Mountains and the gradient profile on the next page give some idea of the rugged terrain over which Valley Heights engines operate. Although, seen from the train, settlement takes on an almost suburban density, it rarely extends more than a mile or so from the railway. In some places sheer drops of over 1,000 feet are encountered.

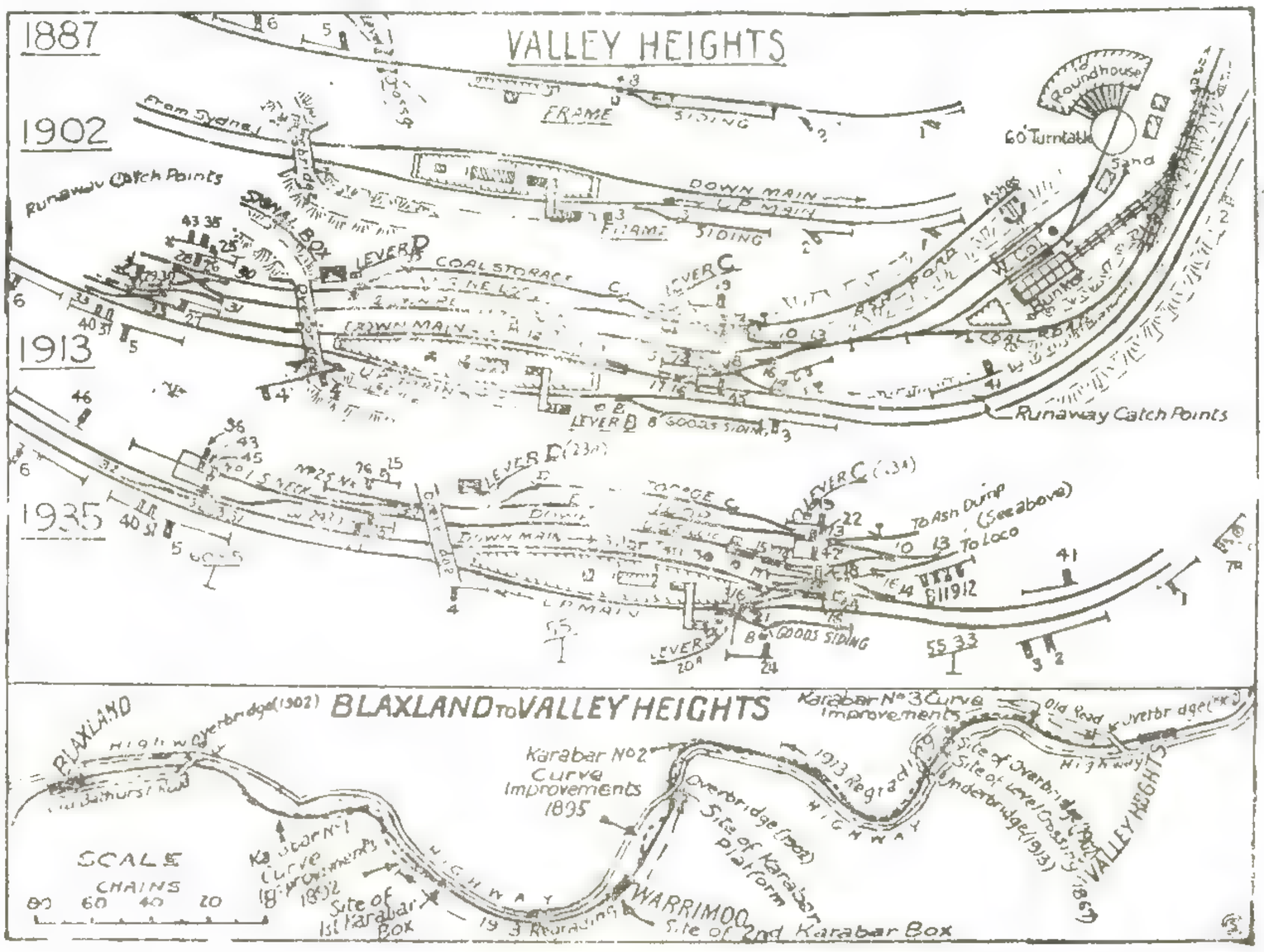


A brief history of the town is appropriate at this stage. In May, 1875, Eager's Platform was erected for the use of the Hon. Geoffrey Eager who lived nearby, but, in 1877, the name was changed to "The Valley" when a waiting shed and public facilities were built. It received its present name on August 19, 1890.

An island platform was constructed with the duplication in 1902, but it was not until later in 1913, that the locomotive depot was completed, consequent upon the introduction of a ruling 1 in 60 grade from Penrith. Until that time pilots were operated from Penrith through to Katoomba, passenger trains being piloted and freighters pushed up.

The eighty men now on the staff of this depot consist of fitters, cleaners, fuelmen, drivers and firemen, a roster clerk and two chargemen, who are under the

Valley Heights has changed considerably since it was opened in May, 1875, as Eager's Platform. Subsequent alterations are shown in the accompanying diagram, which indicates the position of the locomotive depot relative to the station.



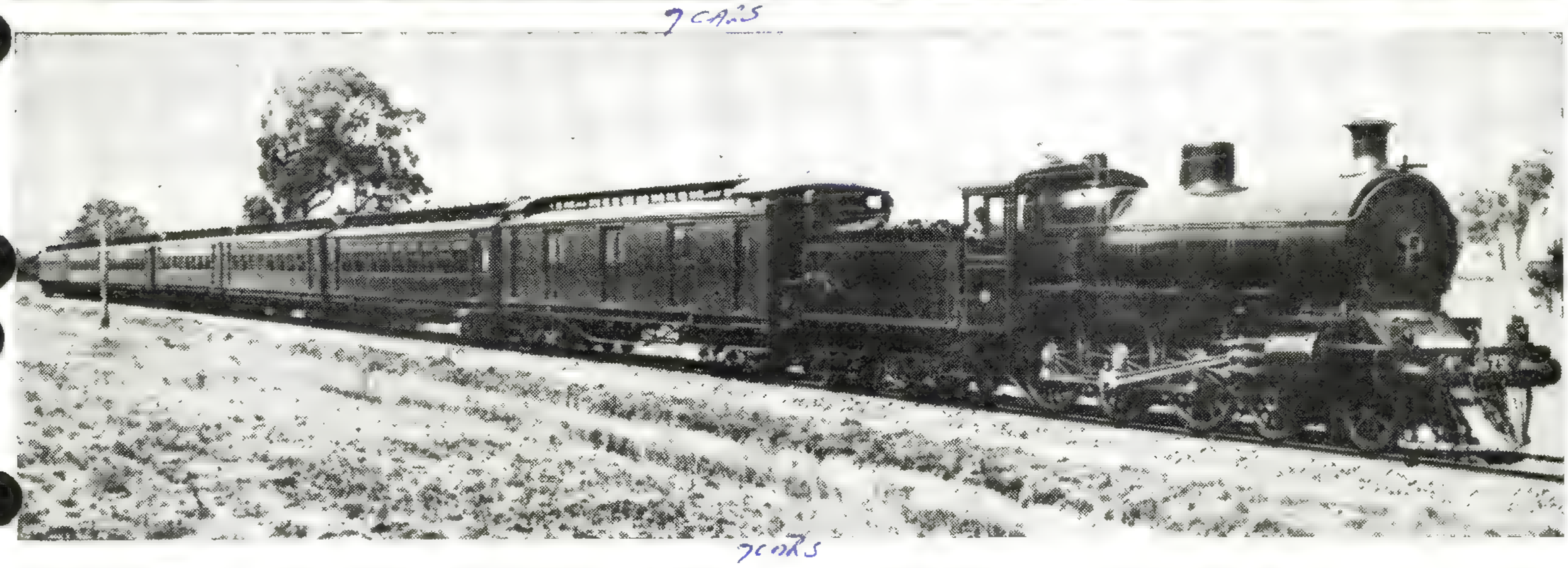
"THREE SCORE AND TEN"— By Lloyd F. Holmes

Having reached the Biblical "span of life," the Melbourne-Sydney express service is anything but ready for the grave, despite fierce competition, it is flourishing.

August 21, 1953 marked the 70th birthday of this train, the first Sydney Express having left Melbourne on that day in 1883 behind a B class 2-4-0—evidently the crack passenger power of those times. Scheduled to leave the Victorian capital at 4.55 p.m., the express was due at Albury five hours and 53 minutes later at 10.48 an average speed of 31 m.p.h.

The N.S.W.R. connection left the gas lights of the border city at 11.45 p.m. (N.S.W. time, then 25 minutes ahead of the Victorian clocks) and the city of "Our Harbour" was reached at 1.45 p.m., giving a respectable average of 28½ m.p.h. over the 400 difficult miles from the Murray.

Motive power of the "Sydney Limited" (it became the "Spirit of Progress" in 1937) was provided successively by B class 2-4-0's, A class 4-4-0's DD class and [illegible] class 4-6-0's and S class 4-6-2's. Now another B class in the form of a 1500 h.p. diesel electric loco has come—a far cry from the tall-stacked original which hauled grandfather on his business trips!



Illustrations are: page 8 (top) Sydney Express of 1885 at Spencer Street—6-wheel stock, headed by an A class 4-4-0 (note American-built loco at right); (lower) 1889—first bogie stock, headed B class 2-4-0 with "New A" 4-4-0 as pilot, surmounting the Glenroy bank; this page (top) new AVE and BVE cars in 1907 —DD class 4-6-0 No. 674; (centre) the first A2—note changed position of the van; (lower right) "Spirit of Progress" hauled by S class 4-6-2 on bridge over River Murray near Albury (note N.S.W. standard gauge track at right); (left) diesel powered, passing Seymour. (Photos by courtesy Victorian Railways, except diesel by author).

VALLEY HEIGHTS

[Continued from page 7]

supervision of the district locomotive engineer, Mr. Bruce Wilson.

There are eight Standard Goods Engines (D-50 and D-53 class 2-8-0's) and two C-32 class 4-6-0's permanently located at this depot. The 2-8-0's are used to pilot all the freight trains battling their weary way "up the hill" and are used also to pilot the passenger and express trains destined for Mount Victoria, Lithgow and far beyond. Occasionally the 4-6-0's will be seen piloting a passenger, but this is resorted to only when freight traffic is extremely heavy and all the 2-8-0's are preoccupied therewith.

It can be said that the two "Ten-wheelers" are mainly standing pilot to relieve any through passenger engine which may fail. So, too, the "Consolidations" are often required to relieve a through freighter which is steaming dull or having mechanical trouble, thereby preventing it from running the train to time (or running it at all!).

Running time for the 20 miles 16 chains climb on which the elevation rises 2,280 feet, varies according to the particular train. Generally speaking, through freighters hauled by a "Mountain" type locomotive are allowed 82 minutes when conveying a full load of 630 tons and two "Consolidations", conveying 460 tons, require 94 minutes.

Passenger train times vary considerably. No. 9 Mixed, worked by the sterling C-36 class 4-6-0, and assisted by a 2-8-0 requires 92 minutes, but in this time stops at all ten stations. The load is usually 300 tons or more. No. 215 Local Passenger, worked by a C-32 class with a single load of 150 tons is allowed only 68 minutes.

A D50-class 2-8-0 pilots a C38 Pacific on train No. 31, the Down "Central West" express west of Valley Heights. Notice the new sleepers awaiting the track gang, also the pipes partially in place.

The world-famous "Fish", and the morning Mt. Victoria Passenger, No. 23, each hauled by the C-36 class engines and assisted by one of the 2-8-0's are required to ascend in 67 minutes, stopping all stations, as is No. 67 Saturday afternoon Lithgow Passenger which conveys a single load of 200 tons.

Of the night mails, all piloted, the Coonamble Mail is allowed but 60 minutes, with one stop at Lawson, and No. 49 Forbes Mail running through is allowed 58 minutes. No. 61 Cowra Mail, hauled by either a C-32 or C-36 class, climbs in 62 minutes.

The fastest ascents are made by No. 63 Mudgee Mail worked by a C-36 class, in 52 minutes, whilst No. 31 Central West Express, 348 tons, worked by a C-38 class "Pacific", is allowed 53 minutes. Both trains are assisted by one of the "Consolidations".

In the depot, various types of repairs are carried out, including tone-ups, but engines requiring major repairs or overhauls are sent to Enfield. Cold water boiler washing out is done in the ten-stall shed, three roads radiating from a 60-ft. turntable. One of the 2-8-0's will be found in the shed under tone-up. The coal stage is elevated, access being gained on a switch back, beside the down Main.

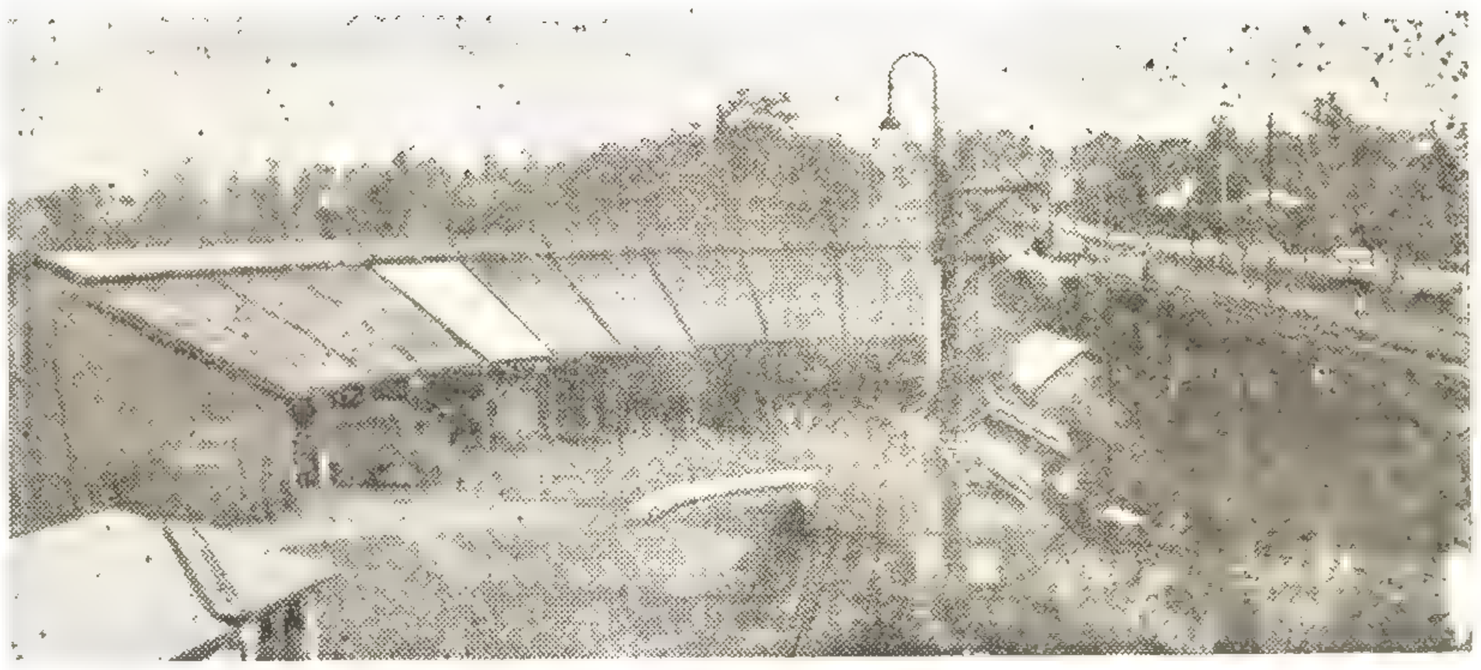
The volume of traffic handled is quite heavy. On an average 30 trains daily are piloted, but this figure is often exceeded. The number falls to roughly 25 on Saturdays and around the 20 mark on Sundays. Pilot crews usually handle two trains per shift, but when crews are short, three pilots per shift are run, returning light engine from Katoomba, where the engine is turned; return running time is 53 minutes.

Two sets of men are required for train work. One set work No. 48 "The Chips" to Sydney and return on No. 217, 1.25 p.m. ex-Sydney. On arrival at Valley Heights they are relieved by the second set who work the train to Mt. Victoria, returning on No. 218 to be relieved by Eveleigh men off No. 47 "Chips". One pilot set pilot No. 61 "Cowra Mail" and No. 173 Goods (or similarly-timed train) and instead of returning light engine, they work No. 101 Cooerwell (Lithgow Small Arms Factory) Passenger to Lithgow. There they remain in the resthouse until evening, to return on No. 102 Up Cooerwell to Katoomba, thence light engine to Valley Heights and perform one or two pilots as required.

Both No. 101 and No. 102 are hauled by a Standard Goods Engine.

Very few trains pass through Valley Heights without being assisted to Katoomba due to the limited loads. Seldom does a "Mountain" go through with a single load of 400 tons. No. 17 Pick-up generally conveys a single load of under the prescribed 230 tons. Some local

(From previous page)



The 10-stall roundhouse at Valley Heights, with its 60-ft. turntable, as viewed from the coaling stage. The "switchback" ramp to the stage can be seen on the right, beside the main line beyond which is the Great Western Highway. Engines visible are all of the 2-8-0 "standard goods" type.

Reverse view to that above, with the roundhouse wall just visible at right. Notice the very tall signal post with home and distant arms. The line curves sharply to the right to Valley Heights station which is on the Sydney side of the Loco Depot.

passengers convey single loads, 175 tons for the C-32 class and 200 tons for the C-36 class. The C-38 class "Pacifics" can take 240 tons "up the hill", but No. 31 is the only Western train worked by these engines and so requires the Valley Heights Pilot engine to Katoomba.

NEWS WANTED

Don't forget to send in every possible item of news to our news editors. What is stale to you will be of great interest to others.

Mr. Lloyd Holmes,
Batten Street,
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News items should reach him by the 20th of each month.

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Model Railways

STEAM — CLOCKWORK — ELECTRIC

ALL GAUGES

Edited by David Gross

It is indeed heartening to receive the co-operation of readers in the form of articles and construction hints, etc.

However, more is wanted. With the hundreds of modellers all over Australia there must be a wealth of ideas and information available which has as yet not been made public to the hobbyists in general, therefore, I ask you to assist in building up this section of the magazine by sending in details of what you are doing and any hints or ideas you have discovered.

These pages are just begging for news of clubs, associations, etc., so here is an avenue of free publicity which all club secretaries should exploit.

As Model Railways is the name of this section, no doubt you, the reader, must expect to read about layouts. Well to be able to include such matters I must first have the information from the modellers concerned; so how about it chaps. Send in the details of your layout, hints and kinks developed during construction, photographs if sharp and clear and a plan, drawn in indian ink, on drawing paper or unruled paper 13 in. top and bottom by 8½ in. sides.

DAVID GROSS, Models Editor.

CONSTRUCTION HINTS

Scenery

A suitable and cheap method of making scenery is to firstly build your skeleton frame-work and cover it with fly wire. Then as a covering medium use old newspapers. Wet these in a mixture of wall size, and spread haphazardly over the wire. When you have covered the area to be scenicked, tip saw-dust into the size until a thick wet hash is attained, then throw the wet saw-dust all over the paper surface. When dry, spray with various water colours, and there you have it.

Small Turning in Hand Drill

Even if you do not own a lathe, you can still do small turning jobs such as details for your loco and cars. Place your hand drill in a bench vice, gripped by the handle, insert the piece of metal to be shaped in the drill chuck and whilst one hand is turning the hand wheel you have the other free to use files to do the shaping.

MODELLERS AND CLUBS IN THE NEWS

Graham Watsford, A.M.R.A. and N.M.R.A. has now been elected the State Secretary/Treasurer of the Victorian Branch of A.M.R.A., following Chas. Craig's resignation.

Dick Gutteridge has donated a 6 ft. and 4 ft. HO layout to Vic. Branch A.M.R.A. and David Bennett has offered to put it into running order so that the HO boys can have some operation on meeting nights.

Roy Colwell, A.M.R.A., is now busy on his "O" gauge track work, but as yet is not sure where it will be finally established.

The Victorian Model Railway Society has been approached by the V.R. to assist in the proposed Centenial model display in 1954. Models for this display are being built by the society's members and they will instruct V.R. men how to drive the trains for the display.

The Victorian Branch of A.M.R.A. has recently put on a display of members' models in the window of a leading Melbourne store. "O" gauge and "HO" models predominated, and this display appeared to attract much attention from the public. No doubt to the benefit of the hobby.

QUESTION BOX

Question: What is the correct term for 16.5 m.m. gauge?

Answer: Firstly let us look at 1¼ in. gauge, where scales of ¼ in., 17/64 in. and 7 m.m. are used, all being included in the term of "O" gauge, thus showing that "O" gauge refers to the track gauge and not the scale. Can you imagine what the hobby would be like if "O" gauge referred to ¼ in. modelling, "X" gauge to 17/64 in. modelling and "B" gauge to 7 m.m. modelling. It could be one of the greatest deterrents of scale railway modelling that the hobby could be subject to; yet, such a state of affairs is taking shape in 16.5 m.m. gauge.

There are models built to 3.5 m.m. scale called HO, models built to 3.8 m.m. scale with no term, and models built to 4 m.m. which are called "OO", but they all run on the same gauge of 16.5 m.m., which is HO gauge. Therefore, they should all be called HO models.

A point to mention here is that "OO" started in England soon after HO was established, because it was found the HO was too small to model the small-sized English locos and cars. The gauge for "OO" is 19 m.m. and the scale is 4 m.m. to the foot. However, in England, they decided to use 16.5 m.m. track for their 4 m.m. scale models, which means that they are in fact running on narrow gauge, for HO gauge is 12½ per cent. smaller than "OO" gauge.

In Australia, where there is an ever increasing trend towards modelling local equipment and where the hobby is rapidly growing, now is the time to eliminate all scale Z gauge confusion and realise that 16.5 m.m. is HO gauge regardless of whether modelled to ⅛ in. or 3.5 m.m. - 4 m.m.; with the exception of deliberate narrow gauge modelling.

Roy Colwell asks if anyone knows how to stop the shoe on his stud contact loco from squeaking as it passes over the studs.

[Would any reader who has solved this problem, please write to the magazine.—Editor.]

SOLVING LAYOUT PROBLEMS

By Trevor J. Hosking

Part II

In this second article on the discussion of space problems, I would like to comment on a few of the accompanying station layouts. Most of them are not my "brainchilds", but rather adaptations from proto-

my "brainchilds", but rather adaptions from proto-

t V.R. stations in the country. All slip crossings and other complicated forms of trackwork have been scrubbed off, and simple turnouts have been instituted. Some readers may find the diagrams of some stations oversize for their layouts, or should I say layouts-to-be, but with a bit of wangling, good points a ted from them may be incorporated in a plan b g in the process of completion.

Plan No. 1 is a station typical of many in Victoria, where trains cross, and where goods facilities are provided.

Plan No. 2 is also particularly typical of small i mediate V.R. stations, and, of course, of the space saving variety.

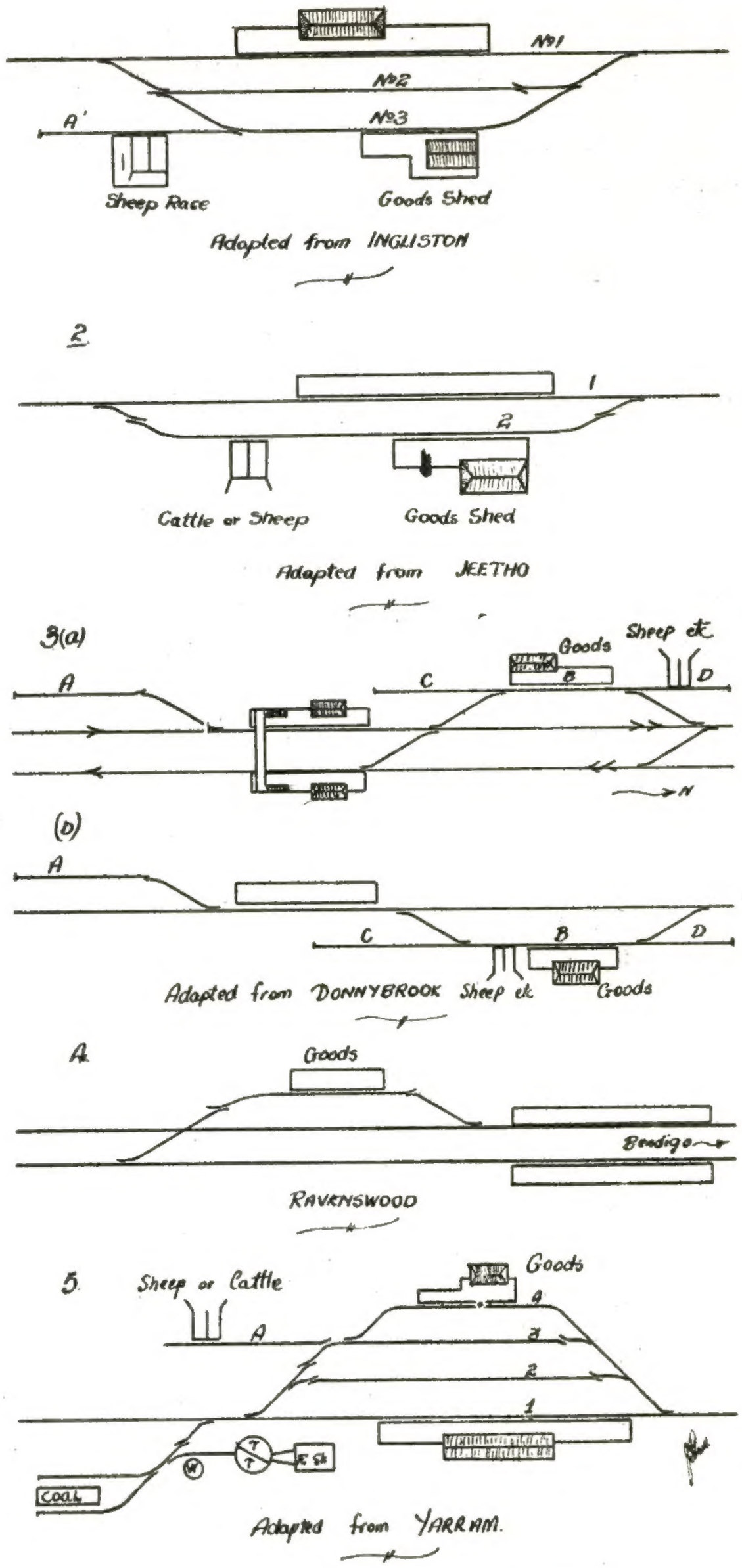
Plan No. 3 is a simple but effective station layout, of which both a single and a double line version is drawn, the original being dual-track. This plan will fit admirably into a long-and-narrow space, and has ex- t operating possibilities.

The double line version is more compact, but individual taste matters in all layouts, considering route, SPACE, station situation and proposed services. Siding "A" is used as a refuge siding, where northbound waysides leave the train and van, not to be shunted, e siding and proceeds along the main to the far yard lead, then the engine can shunt from both s. This layout, I assume, was primarily designed for switching on northbound trains, although cross-overs have been provided for southbound working.

Plan No. 4 is suitable for "that there inter-station", t am in on the main, as a form of a flag-stop, with scenery "filling in the distance between the larger stations". The layout has not been adapted, but is as the prototype on the V.R., at Ravenswood, near Bendigo.

lan No. 5 is a single line terminal, adapted from Y am; and I don't want a swamp of letters telling m hat Yarram is not a terminus, but it has all the possibilities of a "dead-end", so I have cut short the main line, which, I know, continues on further.

[In the next article, junctions and "hideways" will be dealt with; in the meanwhile, if any reader would li more information about any of these layouts, concerning signalling and the like, just drop a line to Trevor at 7 Catalina Avenue, Ashburton, S.E.11.—Editor.]



TASMANIAN RAILWAYS

ABANDON TAS. PASSENGER SERVICES
Says British Expert

After being in Tasmania for two months, at the request of the Tasmanian Transport Commission, Mr. H. Phillips, an executive of British Railways, has recommended that all rail passenger service in Tasmania be abandoned, except in the Hobart suburban area.

He advocates road transport for country travel, and estimates a saving of £379,000 yearly. Last year the Transport Commission lost more than £1 million.

It is not thought likely that Mr. Phillips' suggestion will prove acceptable to the Government of Tasmania.

the steam distribution to the four cylinders. Water is carried in the tank in front of the smokebox, and both water and fuel oil in the tender behind the cab, total capacity being 3,700 gallons of water. Length over couplers is 87 ft. 6 in.

The S.A.R. have called tenders for the supply of ten 650-750 h.p. diesel electric switchers for service mainly in the Port Adelaide area.

VICTORIAN RAILWAYS

Mainline Electrification

Latest news of the Gippsland mainline electrification project is that Melbourne (Flinders Street) and Warragul will be connected by electric trains in May, 1954.

Seventeen of the 25, 2,400 h.p., L class electric locomotives on order have been delivered, the remainder being due by March, 1954. These machines weigh 96 tons, and cost the V.R. £77,000 each.

Fancy Numbers for Diesels

Latest fittings on the B class "growlers" are side brass numbers which are fitted "amidships" between the centre portholes. This alleviates to some extent the bare appearance of the B class sides—a space which most other diesel-owning railways have put to good advertising use.

No Underground Yet

The underground railway system so long promised During its latest brief emergence from the pigeonholes, it was stated (by Commissioner Wishart) to involve for fast-growing Melbourne is in the news again. expenditure of £15 million and to be unlikely before at least 1960, owing to pressure of other important works.

New Locomotives Next Year

The first of the J class light Consolidations are due in Melbourne in January next. Thirty will be oilburners and thirty will burn coal. All are being built by Vulcan Foundry Ltd., England.

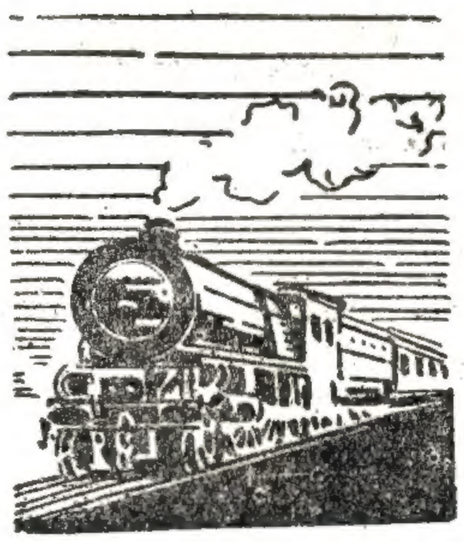
Diesels to Geelong

According to a Werribee correspondent, the Busy Bees (B class mainline diesels) are sharing the running of passenger trains on the Geelong "speedway" with the R class Hudsons. (It was on this stretch of straight level track that the "Spirit of Progress" reached spectacular maximum speeds before entering regular service on the North-eastern line.) The diesels regularly haul the morning "Geelong Flyer" while the evening Up "Flyer" is handled by a 4-6-4.

Narrow Gauge Notes

One of the four narrow gauge lines in Victoria, the 30-mile Wangaratta-Whitfield branch carried its last train on Monday, 12th October. This freight-only line was abandoned because of scarcity of business. The two Na class 2-6-2T locomotives kept at Wangaratta for the Whitfield line were of the standard type used on all the 2 ft. 6 in. gauge lines.

Under the heading "Puffing Billy Will Ride Again", a Dandenong Ranges newspaper reports that the closure of the 2 ft. 6 in. gauge line from the outer Melbourne suburb of Ferntree Gully to Gembrook is only temporary, being the result of rain-caused landslides between Menzies Creek and Selby. The biggest slide is just beyond Tank, a well-known water stop, where the whole hillside has moved bodily. Residents of the Ranges who appreciate the bi-weekly passage of "Puffing Billy" have been assured by the Victorian Railways that there is no intention of closing the line permanently.



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AUSTRALIAN ELECTRIC TRACTION ASSOCIATION: Melbourne — 3rd Friday, V.R. Institute, 8 p.m. (W. G. Mercer, 18 Embling Road, Malvern, S.E.4, Vic.); Sydney — 3rd Thursday, Railway Institute, Devons[illegible] p.m. (B. Craig, 63 Second Street, Ashbury, N.S.W.).

AUSTRALIAN MODEL RAILWAY ASSOCIATION: Victorian Branch — 4th Friday, St. Mark's, George Street, Fitzroy. (Federal Secretary — T. Dunlop, 105 Blake Street, Reservoir, Vic.).

AUSTRALIAN RAILWAY HISTORICAL SOCIETY: Sydney — 2nd Tuesday, Railway Institute, Devonshire Street, 8 p.m. (H. L. McDonald, 3a Oxford Street, Burwood, N.S.W.); Melbourne — 4th Thursday, V.R. Institute, 8 p.m. (R. T. Sloggett, 12 Ayr Street, [illegible], Vic.); Adelaide — 4th Wednesday, S.A.S.M.E.E. [illegible], Millswood (B. J. Castle, 17 Cecilia Street, Brighton, S.A.).

BRISBANE MODEL RAILWAY CLUB: 1st and 3rd Thursday, 36 Coulburn Street, Kedron, 8 p.m. (C. Harrison, 110 Haig St, Stafford, N.3).

NATIONAL MODEL RAILROADERS' ASSOCIATION (Australian Area): 22 Whish Street, Windsor, Qld.).

NORTHERN SUBURBS MODEL RAILWAY ASSOCIATION: 2nd Thursday, Presbyterian Hall, Artarmon, 8 p.m. (A. W. Perry, 126 Hampden Road, Artarmon, N.S.W.).

QUEENSLAND SOCIETY OF MODEL ENGINEERS: 4th Monday, 8 p.m. (C. H. Garner, "Elsinor", Gray's Road, Gaythorne, Qld.).

S.A. SOCIETY OF MODEL & EXPERIMENTAL ENGINEERS: 2nd Tuesday, "Sasmea Park", Millswood Crescent, Millswood, 8 p.m. (V. H. Messer, 43 Denning Street, Unley, S.A.).

SYDNEY MODEL RAILWAY SOCIETY: Mondays, 273 Castlereagh Street (4th Floor), 8 p.m. (R. Brewer, 40 Leura Road, Auburn, N.S.W.).

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TASMANIAN RAILWAY & MODEL RAILWAY SOCIETY: Hobart — (K. Andrews, 386 Park Street, Hobart); Launceston — (K. Flood, 146 Wellington Street, Launceston).

VICTORIAN MODEL RAILWAY SOCIETY: 3rd Wednesday, Auburn Railway Station 8 p.m. (A. Good, 29 Elizabeth Street, Elsterwick, Vic.).

W.A. MODEL ENGINEERING SOCIETY: 1st and 3rd Wednesday, Railway Institute, 8 p.m. (I. Norman, 54 Woodsome Street, Mt. Lawley, W.A.).

The illustration of No. 401, one of the new S.A.R. Garratts (see notes, this page) is from a drawing by our News Editor, Mr. Lloyd Holmes.

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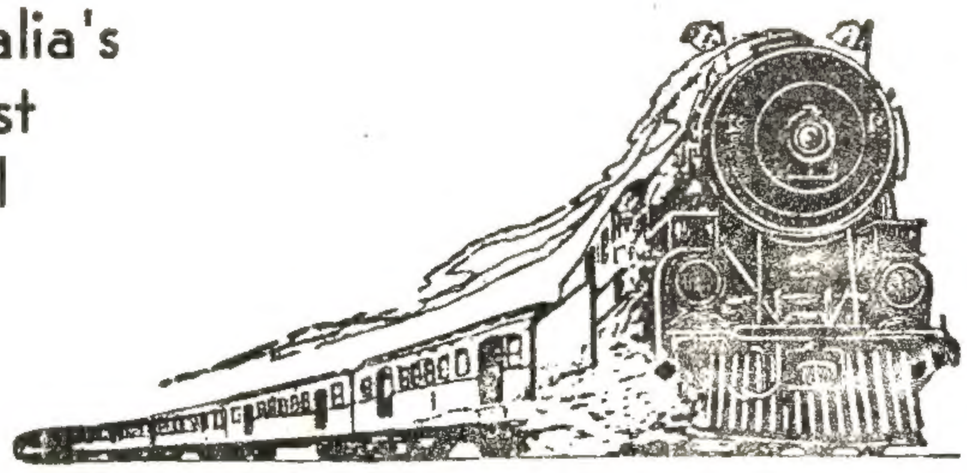

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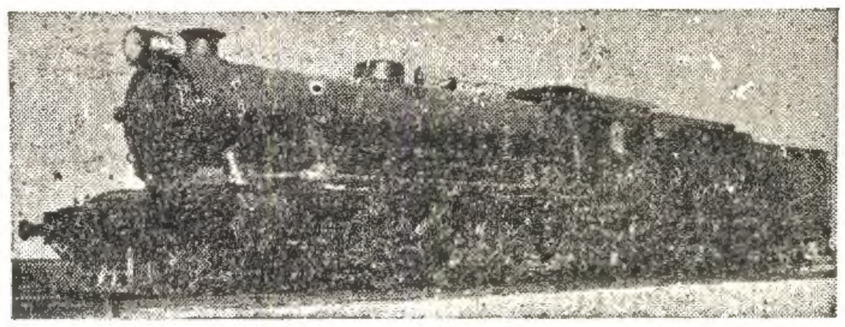

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